PBW

Consulting Engineers and Scientists

PASTOR, BEHLING & WHEELER, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664

Tel (512) 671-3434
Fax (512) 671-3446

December 22, 2015
PBW Project No. 1358

VIA HAND DELIVERY

Ms. Karen Scott
Industrial & Hazardous Waste Permits Section
Texas Commission on Environmental Quality
P.O. Box 13087, MC-130
Austin, Texas 78711-3087

RECEIVED
DEC 22 2015
WASTE PERMITS DIVISION
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Re: Response to Technical Notice of Deficiency
Permit Renewal/Compliance Plan with Major Amendment
Union Pacific Railroad Company – Houston Wood Preserving Works
Houston, Harris County, Texas
Permit/Compliance Plan Number: 50343/ ISWR No. 31547
CN600131098/RN100674613

Dear Ms. Scott:

Please find attached with this cover letter the Response to Technical Notice of Deficiency (NOD) on the Permit Renewal/Compliance Plan with Major Amendments for the facility listed above. The responses were prepared to address the NODs listed in the Texas Commission on Environmental Quality (TCEQ) letter to Mr. Geoffrey Reeder dated August 5, 2015, with supplemental technical comments in a letter dated October 23, 2015, and comments on the Clan Closure Equivalence Demonstration for the Solid Waste Management Unit (SWMU) No. 1 in a letter dated November 5, 2015. The Technical NOD listed several technical deficiencies in the renewal application and requested that UPRR provide certain additional information to complete the application. The attached table lists each deficiency identified in August 2015 letter as well as UPRR's response indicating how each deficiency has been addressed.

An original and three copies of the application revisions, including updated signature pages, are included as part of this submittal. These revisions have been prepared as replacement pages to be submitted in the original application with a revision number and date indicated on each page. In addition, a red-line strike out version of the revised permit sections is also enclosed.

If you have any questions or comments, please feel free to call Mr. Geoffrey Reeder, Site Remediation Manger, UPRR at 281-350-7197 or me at 512-671-3434.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric Matzner, P.G.
Associate Hydrogeologist

cc: Mr. Geoffrey Reeder, Union Pacific Railroad
Ms. Maureen Hatfield, TCEQ

RESPONSE TO TECHNICAL NOTICE OF DEFICIENCY (NOD) - UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON, TEXAS
HAZARDOUS WASTE PERMIT/COMPLIANCE PLAN NO. 50343/INDUSTRIAL SOLID WASTE REGISTRATION NO. 31547

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T1	A	III.A.2	Table III-1	261 & 268.2	Incomplete	Resubmit Table III-1 to include all historical hazardous wastes, all mixtures containing any hazardous wastes, and hazardous debris which were handled at the permitted unit (U188, 488, 609).	Resubmit Table with additional information
T2	B	I.D.6	Tables provided for this section	305.42 & 305 Subchapter D	Incomplete	For each requested change to your current permit, list the Permit/Compliance Plan (CP) Provision Number that you propose to revise. If revisions are being proposed to a permit/CP table or attachment, list the individual table number or attachment letter. If revisions are being proposed to a Stand-Alone document (i.e., Waste Analysis Plan, Closure Plan, etc.) reference permit Provision I.B. – Incorporated Application Materials. In the next column give a description of the proposed change(s). If new language is proposed, include it in this column. For a facility name change, refer to the permit cover page and request a Global name change. Provide copies of the proposed revision pages (tables, attachments, etc.) and the corresponding redline strike through pages. Reference to the most recent Part B Application may be located at the following site: http://www.tceq.texas.gov/permitting/waste_permits/ihw_permits/ihw_class_3.html Also, Union Pacific Railroad Company (UPRR) is requesting a No Further Action (NFA) status for the closed Surface Impoundment (SWMU No. 1). Until a NFA letter is obtained from the Remediation Division, the closed Surface Impoundment's groundwater monitoring must remain under the Compliance Plan. Once a NFA letter is obtained from Remediation, the groundwater monitoring may then revert back to detection monitoring under the Resource Conservation and Recovery Act (RCRA) permit. UPRR must continue to comply with RCRA as required. Revise and resubmit the section table as applicable.	The table from Section I.D.6 has bee updated to reflect these changes as requested. Union Pacific Railroad (UPRR) received a letter dated November 5, 2015 from the TCEQ detailing the agency's review of the September 18, 2015 submittal titled Additional Information for Clean Closure Equivalence Demonstration. The TCEQ Industrial and Hazardous Waste (I&HW) Permits Section was unable to accept the request for discontinuing post-closure care of the former surface impoundment, Solid Waste Management Unit (SWMU) 1. As a result, a Compliance Monitoring Program has been developed and is included in the revised Section IX.
T3	B	II.A	[Application page 10]	335 Subchapter G	Omitted	For permit renewals, provide a Site Selection Report for the facility which includes all information regarding Unsuitable Site Characteristics found in 30 TAC 335 Subchapter G. In addition, provide the information in Section II.A. The applicant may resubmit the information submitted with the original permit application provided this information has not changed. For a renewal this information is necessary to ensure a complete application is received.	Section II.A has been completed as requested and is attached.
T4	B	II.G.6 & II.G.7	[Application page 16]	264.228, 228(b), & 264.117 through 264.120	Omitted	For existing hazardous waste management facilities, complete and submit Sections II.G.6. and II.G.7., regarding deed recordation and exposure information.	Section II.G.6. has been updated. A copy of the deed notice as submitted with the original Permit Application in May 1991 recording the removal of the wastes from the surface impoundment in accordance with the closure plan approved by the TDWR in 1984 is attached as Attachment II.G.6. Section II.G.7. is not applicable since no hazardous waste is stored, treated or disposed in the closed surface impoundment. This section has been updated to reflect that and is attached.
T5	B	III.A., C., & D.	[Application Pg. 17]	305.50(a)(2)	Incomplete	It appears that no information was provided for Sections III. A, C. and D. However, additional information was provided in the form of an un-named attachment. Revise parts A., C. and D. to provide reference to and location of the un-named attachment.	A reference to this information has been included in the permit section and an updated is provided.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T6	B	III.D.	[Application Pg. 17]	264.15(b)(1) & (d)	Incomplete	If applicable, for application Table III.D. – Inspection Schedule, also include information regarding safety and emergency equipment and security devices (radios, telephones, alarms, etc.). Please submit a copy of the facility's Inspection Log form. Also, please revise this section to include the requirements of 40 CFR 264.15(b) – General Inspection Requirements and to reflect the post-closure care status for the unit. Also, regarding un-named attachment, refer to T5 above and revise this section.	Table III.D. has not been changed as the changes to the inspection schedule are not needed since the site is not an active facility. A copy of the facility's Inspection Log form ins included is included.
T7	B	IV.	Table IV	335.501-.515	Omitted	Complete and submit Table IV.B. – Wastes Managed In Permitted Units for each historically disposed waste and debris managed in the closed NOR No.001.	Table IV.B. is attached.
T8	B	V.A.1	[Figure V.A.1]	305.45(a)(6)	Omitted	Referenced Figure V.A.1 appears to be missing. Submit an overall plan view of the entire facility (Figure V.A.1). Identify each hazardous or industrial solid waste management unit to be permitted in relation to its location and the type of waste managed in that unit. Also provide a plan view at an appropriate scale to clearly show the location of all hazardous waste management units to be permitted on one or more 8.5" x 11" sheets.	Figure V.A.1 is included in the attached Section V.
T9	B	V.A.2	[Figure V.A.2.]	270.14(b)(19), 270.14(c)(3), and 270.14(d)(1)(i)	Omitted	Referenced Figure V.A.2 appears to be missing. Submit a topographic map or maps of the facility which clearly shows the information specified in 40 CFR 270.14(b)(19), 270.14(c)(3), and 270.14(d)(1)(i) (for large HWM facilities, the TCEQ will allow the use of other scales on a case-by-case basis). The term "facility" includes all contiguous land, structures, other appurtenances, and improvements on the land for storing, processing, or disposing of hazardous and industrial solid waste.	Figure V.A.2 is included in the attached Section V.
T10	B	V.D.	[Application pg. 33]	335.168, 335.169, and 264.19, 264.220, 264.221, 264.222, 264.223, 264.226(a) and (c), 264.227, 264.229-264.231, and 270.17	Omitted	A report is referenced for this section but no report was attached, as required by the Application Instructions, Completing This Application, page iii. Provide the historical engineering report for Section V.D.	The attachment to Section V of the permit is included.
T11	B	V.D.1	Table V.D.1	270.17(a)	Omitted	Table V.D.1. – Surface Impoundments appears to be missing. Complete and submit all known information required on Table V.D.1. For information that is not known, please respond with "NA".	Table V.D.1 is included in the attached Section V.
T12	B	V.D.5	[Application pg. 34]	305.45(a)(8) (C)	Omitted	Provide a historical plan view and cross sections of the closed Surface Impoundment. It is noted that cross sections for the closed Surface Impoundment were submitted in the previous permit/compliance plan application.	The cross-sections prepared by Geo Associates and included in the original 1991 permit application are included in the Figures section of the attached Section V as Exhibits 5, 6 and 7.
T13	B	V.D.9.a. & b.	Table V.D.6	335.168(i)	Omitted	Table V.D.6. – Surface Impoundment Liner System appears to be missing. Complete and submit all known information required on Table V.D.6. For information that is not known, please respond with "NA". For Soil Liners, provide all known information (numbers 7 – 10). For leachate collection system, provide all known information (numbers 11 – 16).	Table V.D.6 is included in the attached Section V.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T14	B	V.D.11	[Application pg. 37]	264.221(g)	Omitted	Describe in detail how the closed surface impoundment will manage storm water run-on for a 100-year, 24-hour rainfall event.	Management of storm water run-on is not necessary since all the waste has been removed from the surface impoundment. A statement has been Section V.D.11 to explain.
T15	B	VI	[Attachment VI, Geology Report, Section VI.A.4– Subsurface Soil Investigation]	305.45(a)(8)(C) 270.14(c)(2)	Omitted	For Figures VI.E.1 through VI.E.5, provide a map showing the surface locations for the submitted Cross Sections (A-A', B-B', C-C', etc.). Additionally, referenced boring logs and completion reports appear to be missing from Appendix VI.B. Submit the facility's boring logs and completion reports for Appendix VI.B. Also include a key explaining both symbols used on the boring logs and the classification terminology for soil type, consistency, and structure.	The cross section locations are shown on the attached Figure VI.E - Cross Section Location Map. The boring logs and completion reports were are included on a CD which is also attached and should be included in Appendix VI.B.
T16	B	VI.A.4.d	Table VI.A.4 – Waste Management Area Subsurface Conditions	305.45(a)(8)(C)	Omitted	Complete and submit Table VI.A.4 – Waste Management Area Subsurface Conditions.	Table VI.A.4 with information taken from the Original Part B Application from 1991 is attached.
T17	B	VII.C	[Post-Closure Care Plan & Application pg.102]	264.117(a)(1), 335.174(b)	Incorrect	It is stated on page VII-2 of the Post-Closure Care Plan (PCC) that starting from 1984 hazardous constituents were detected in groundwater and subsequently a PCC Plan and Compliance Plan were issued in June 1994 (updated 2005). Contaminates were presumed to have come from the unit through underlying soil (suggesting residual constituents remaining). Therefore, UPRR should revise the PCC Plan to incorporate a groundwater detection monitoring program for the closed SWMU No. 1.	The PCC Plan has been revised to include a compliance monitoring plan. An updated Section VII is attached.
T18	B	VII.D	[Post-Closure Cost Estimate, Application pg. 103]	40 CFR 264.144	Incomplete	A detailed estimate, in current dollars, of the annual cost of monitoring and maintenance of the facility in accordance with the applicable post-closure regulations must be included in the report. The TCEQ has published Technical Guideline No. 10 for calculating post-closure costs, which should be consulted. Costs should be developed in detail for a period of not less than ten (10) years of post-closure care activities to be conducted by a third party, for each applicable unit. Revise and resubmit the PCC report to include the detailed third party estimate. Revise and resubmit Table VII.E.2. – Permitted Unit Post-Closure Cost Summary. Do not modify table format.	Tables VII.D and VII.E.2 have been updated and are included in the attached Section VII.
T19	B	VIII.A.2	Application instructions pg. iv	30 TAC Chapter 37, Subchapter P	Omitted	UPRR's financial assurance demonstration package was received by the I&HW Permits Section on April 1, 2015. It is noted that a copy was sent to the TCEQ Regional Office in Houston. One additional copy of UPRR's financial assurance demonstration is required by the I&HW Permits Section. The additional copy will be placed in the TCEQ Central Files. Please revise the application materials on file at the Tuttle Branch Library, 702 Kress in Houston.	A copy of the financial assurance will be supplied to the Tuttle Branch Library, 702 Kress, Houston as part of the Response to the Technical NOD.
T20	B	IX.A	[Attachment IX]	305.50(a)(8)(B)	Omitted	Completely describe the possible and/or actual run-off pathways as required by the Preliminary Review Unit Checklist Instructions, number G – Pollutant Disposal Pathways for NOR Units 001, 003-006, SWMU 8 and SWMU 10. Also please complete Date of Operation for 005 and 006.	Pollutant Disposal Pathways for NOR Units 001, 003-006, SWMU 8 and SWMU 10 have been updated. The Dates of Operation for NOR Units 005 and 006 have also been completed. These updated pages are attached.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T21	B	IX.A	[Attachment IX]	335.5	Ambiguous	On report page IX.A.22, the Inactive Wastewater Lagoon (S99) is reported as a low-lying area off-site and as being outside of the facility boundary. In No. VI- Recommended Action, the lagoon is described as being a part of a site wide Compliance Plan. Please provide clarification.	The inactive wastewater lagoon (AOC6) was not part of the facility at the time the suspected release occurred in the area. It is now a part of the facility and is being addressed under the Response Action Plan (RAP). No. VI on Page IX.A.22, the Inactive Wastewater Lagoon (S99) has been updated to reflect its on-site location. The updated page is attached.
T22	B	IX.B	[Application Section IX.B, pg. 121, Appendix II]	350.2(i)	Omitted	In Section IX.B., Appendix II – Wastes Managed, please provide pertinent health, safety, and risk data on each hazardous constituent listed in your Table – Appendix II Summary of Wastes Managed.	Appendix II has been updated to include the requested information. The updated table is attached.
		SECTION XI					
T23	B	Sections VI.B.2.e, XI.A.4 and XI.D and XI.D.1, Vol I & II, RAP Worksheets	Sections VI.B.2.e, XI.A.4 and XI.D and XI.D.1, Vol I & II, RAP Worksheets	30 TAC §350 and §335.167	Incomplete	Further consideration of the groundwater classification in the area and including examining where the Class 2/Class 3 divide occurs will be further evaluated along with the proposed Groundwater protective concentration level exceedance (PCLE) Technical Impracticability (TI) waiver demonstration. The TCEQ will require that UPRR at a minimum monitor dense non-aqueous phase liquid (DNAPL) thickness in all the B-CZ wells, and continue to monitor MW-35B for dissolved phase constituents of concern (COCs) since the well is screened in the lateral transitional boundary where the BTZ pinches out into the B-CZ with some hydraulic connection between the more transmissive sands to the southwest and the carbonate seams encountered.	TCEQ did not approve the Class3 issue, but open to the TI discussion. UPRR will continue to monitor DNAPL thickness in all of the B-CZ wells that will not be removed as part of the soil cap. In addition, MW-35B will continue to be monitored.
T24	B	Sections VI.B.2.f, XI.A.4 and XI.D.	Sections VI.B.2.f, XI.A.4 and XI.D.	30 TAC §305.45(a)(8)(C) and §350.33.(f)(4)(C)(iii)	Incomplete	On page VI-11 of the December 2014 Geology Report, UPRR explains the Level 3 Communications line may act as an artificial penetration since the reported depths of the line go through both the transmissive zones A-TZ and into the B-CZ immediately below the primary source area. However, UPRR claims that it is highly unlikely that the communication lines are not acting as a migration pathway. UPRR should provide additional assessment or monitoring data to supplement their demonstration that the communication line is not acting as a preferential pathway to meet the plume management zone (PMZ) criteria pursuant to 30 TAC §350.33.(f)(4)(C)(iii). If the information cannot be substantiated as part of the Permit Renewal application, then UPRR may need to designate certain monitoring wells in the vicinity of this area as part of the PMZ monitoring program to verify this will not occur. Pursuant to 30 TAC §350.33.(f)(4)(C)(iii) persons are to demonstrate that there are no artificial penetrations which can allow constituents of concern (COCs) at concentrations which exceed the critical groundwater PCLs to migrate from the groundwater PCLE zone to currently unaffected groundwater bearing units.	Page VI-11 of Section VI was revised to clarify the lack of water wells identified in the area of the Site that could potentially create an artificial penetration leading to vertical migration of chemicals on concern. To address the TCEQ request to assess if the fiber-optic communication lines are creating an artificial pathway to deeper GWBUs, UPRR proposes to retain monitoring well MW-19C located in close proximity to the communication lines as a Corrective Action Observation Well. Well MW-19C will be incorporated into the groundwater monitoring program (see CP Attachment A, Sheet 5 of 6, PMZ Boundary Map C-TZ in Section IX).

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T25	B	Sections IX.A.1 and XI.A.3, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Tables I and II	Sections IX.A.1 and XI.A.3, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Tables I and II	30 TAC §335.166, and §305.45(a)(8)(C)	Incomplete/ Inconsistent	Review of Section IX.A.1 and XI.A.2.a, and CP Tables indicates clean closure was approved for notice of registration (NOR) Unit 001/ solid waste management unit (SWMU) 1 – Landfill, TCEQ Unit No. 001 on February 28, 1984. However, the Texas Department of Water Resources, Texas Water Development Board letter dated February 28, 1984 is an acceptance letter for the facility's Closure Plan. Additionally, in a letter from the Texas Water Commission, dated July 11, 1990, closure did not meet the permitting standards of 40 CFR Part 264.228 and the facility was directed to apply for a PCC permit. A Compliance Plan was also required in this letter due to releases to the groundwater. UPRR provided documentation in the Renewal application demonstrating the groundwater protection standard (GWPS) has not been exceeded for 8 consecutive years for all the COCs in all CP Table V monitoring wells for SWMU 1. As a result, UPRR requests to cease post-closure care activities and proposes no further action (NFA) for the unit. The TCEQ Remediation Division, Corrective Action Program concurs with UPRR proposed request. However, final determination is pending IHW Permit Sections' authorization to cease post-closure care activities for this unit.	UPRR submitted additional information to the TCEQ regarding the closure activities of the SWMU No. 1 under a cover letter dated September 18, 2015. The submittal discussed the Geo report that confirmed the conclusions of the Rollins 1984 SWMU 1 Closure Report that the source area had been removed from SWMU No.1. The additional information was provided to support the request to cease post-closure care for the SWMU No. 1. However, the TCEQ issued a review letter dated November 5, 2015 stating that the I&HW Permits Section was unable to accept the request to discontinue Post-Closure Care of the SWMU No. 1. Therefore, with the approval of the TCEQ for No Further Action under the Corrective Action for SWMU No.1, the permit application was revised to detail groundwater monitoring at the SWMU No. 1 through the Compliance Monitoring Program, as discussed in Section XI.
T26	B	Sections IX.A.1 and XI.A.3, XI.D XI.D.1, Vol I & II, RAP Worksheets and CP Tables I	Sections IX.A.1 and XI.A.3, XI.D XI.D.1, Vol I & II, RAP Worksheets and CP Tables I	30 TAC §335.167, §305.45(a)(8)(C), and §350	Incomplete/Inconsistent	For the SWMUs and areas of concern (AOCs) subject to corrective action pursuant to 30 TAC §335.167 that are listed in CP Table I.C, add a line under Unit Type with a label "*On-Site PMZ.*" This will clarify which units/areas are associated the on-site PMZ, UPRR-owned property.	The CP Table I.C. have been updated with the requested label.
T27	B	Sections IX.A.7 IX.A.11, IX.A.18, IX.A.21, IX.A.22 and XI.A.3 and CP Table II	Sections IX.A.7 IX.A.11, IX.A.18, IX.A.21, IX.A.22 and XI.A.2.b and CP Table II	30 TAC §335.167, and §305.45(a)(8)(C)	Incomplete/Inconsistent	Review of Sections IX.A.7, IX.A.11, IX.A.18, IX.A.21 and IX.A.22 indicates releases to both soil and surface water may have occurred at SWMU 2, SWMU 6, AOC2, AOC5 and AOC 6, respectively. However, review of CP Table II indicates that only soils were impacted at these units/areas. For consistency, please revise CP Table II to indicate soil and surface water is the affected media at the above referenced units/areas. If this is not the case, then UPRR should revise the appropriate portions of the Permit Renewal application (e.g. Sections IX.A.7, IX.A.11, IX.A.18, IX.A.21 and IX.A.22) by providing a more detailed discussion as to why only soils were impacted.	The information for the pages in Section IX were taken from the RFA (which were suspected releases to media), whereas the CP Tables are reflective of the actual investigation data for each of those SWMUs/AOCs. Also, the table was completed to be consistent with the previous permit renewal. The following has been added to each section to provide more details as to why only soils were considered impacted: While surface water run-off was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T28	B	Sections IX.A.15 and XI.A.2.b XI.A.3 and CP Table II	Sections IX.A.15 and XI.A.2.b XI.A.3 and CP Table II	30 TAC §335.16730 TAC 305.45(a)(8)(C)	Incomplete/Inconsistent	Review of Sections IX.A. 15 indicate releases to surface water occurred at SWMU 11. CP Table II should be revised to indicate affected media is surface water in order to be consistent with Section IX.A. 15 of the Part B Permit Renewal application.	See previous response.
T29	B	Sections XI.C.1.a(1)(j) & XI.C.1.a(8) and CP Table I	Sections XI.C.1.a(1)(j) & XI.C.1.a(8) and CP Table I	30 TAC §335.166	Inconsistent	In order to be consistent with comment No. T25 the language in the far right hand column of CP Table I.A should be revised to state, "*Corrective Action Monitoring Program will be terminated and NFA approved upon issuance of the December 10, 2014 Permit Renewal.*"	The correction will be made to Section XI, CP Table I.A.
T30	B	Section XI.A.3 and CP Table II	Section XI.A.3 and CP Table II	30 TAC §335.167, and §305.45(a)(8)(C)	Inconsistent	In order to be consistent with Comment Nos. T25 and T29 regarding SWMU-1, revise the language in CP Table II, row 1, far right hand column to state, "*Corrective Action Monitoring Program will be terminated and NFA approved upon issuance of the December 10, 2014 Permit Renewal.*"	The correction will be made to Section XI, CP Table II.
T31	B	Section XI.B, CP Tables III, V and VIII	Section XI.B, CP Tables III, V and VIII	30 TAC §335.160 and §350	Inconsistent/Incomplete	Review of CP Table III indicates that UPRR proposes to sample for vinyl chloride in selected wells. However, no wells were specified in either CP Tables V and/or VIII as to which wells are proposed for selected sampling of vinyl chloride. For clarification, a footnote notation should be placed next to vinyl chloride and foot noted added at the bottom of CP Table III indicating which wells will be sampled for vinyl chloride. The frequency of monitoring for the selected wells should also be specified as an item on CP Table VIII.	The requested information will be added to the CP Table III as a footnote, as well as the frequency for monitoring of VC added to the CP Table VIII.
T32	B	Section XI.B and CP Table III and IIIA	Section XI.B and CP Table III and IIIA	30 TAC §335.160 and §350	Inconsistent	Since vinyl chloride is a microbial degradation product in groundwater it should be added to CP Table IIIA. In order to be consistent with Comment No. T30, the same notations and footnotes should be added to CP Table IIIA.	The source of the vinyl chloride is not from a degradation of a parent chlorinated hydrocarbon, but rather it is likely from a contaminant in a creosote extender used in the late 1970s. VC added to the CP Table IIIA with the appropriate footnote for selected wells. Section XI.D.2.g was revised to add language regarding the likely source of the vinyl chloride.
T33	B	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	30 TAC §335.160 and §350	Inconsistent	During the June 9, 2015 meeting with UPRR, the TCEQ explained that the on-site PMZ boundary can only include the UPRR-owned property, and should be re-labeled as the "*On-Site PMZ*". Therefore, please revise CP Tables III and IIIA accordingly. There should be separate CP Tables for each proposed PMZ. UPRR should also revise all other applicable tables and associated figures in the Renewal application to reflect the correct boundary of the on-site PMZ.	CP Tables and Figures in Attachment A were revised showing the On-Site PMZs (West and Main) as only UPRR-owned property, and Off-Site PMZ for City of Houston and residential (or non-UPRR owned) properties as proposed. See CP Attachment A, Sheets 4 of 6, 5 of 6, and 6 of 6 in Section XI.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T34	B	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	30 TAC §335.160 and §350	Inconsistent	It was also noted during the June 9, 2015 meeting that the City of Houston-owned right-of-way (ROW) cannot be considered as part of the on-site PMZ and should be separated and re-designated as an off-site PMZ. UPRR mentioned in the meeting that the City has indicated that they are agreeable to the deed recordation for the PMZ within the City ROW. The off-site PMZ can be established provided that UPRR has obtained written consent from the City of Houston in the form of a signed deed notice and restrictive covenant for the affected groundwater being closed/remediated to commercial/industrial PCLs pursuant to 30 TAC §350.111 (c) and (e) and should be submitted with the Permit Renewal application which contains the RAP. If UPRR can provide the appropriate written consent as indicated above, then create a separate CP Tables III and IIIA for the City owned ROW which should be labeled as "*City of Houston-owned ROW Off-Site PMZ*." UPRR should also be sure to revise all other applicable tables and associated figures in the Renewal application to reflect the correct boundary of the off-site PMZ accordingly. If written consent is not obtained, just remove the reference to PMZ.	See previous response. UPRR will request written consent from the City of Houston for the restrictive covenant for the permit renewal. In process of getting the restrictive covenants from the City, awaiting final survey of the City of Houston ROW.
T35	B	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	30 TAC §335.160 and §350	Inconsistent	For the off-site private land owners property proposed PMZ to the north, UPRR explained during the June 9, 2015 meeting that as of the end of May 2015, UPRR has only been able to obtain signatures from 45 of the 101 adjacent residential property owners. UPRR believes that within a two year period they will be able to get 80% of the properties to sign the deed notice and restrictive covenant as proposed in the draft RAP contained in the Permit Renewal application. UPRR also explained the difficulty in finding and identifying some of the property owners because of major hurdles like there is no clear title and it can be difficult for some residents or owners to prove ownership. As staff explained in the meeting, the off-site PMZ cannot be authorized until the off-site deed recordation/restrictive covenant is resolved. The TCEQ recommends that UPRR continue to pursue obtaining off-site private land owners written consent as proposed in the RAP and obtain as much information as possible to document "hurdles" in obtaining signatures such as titles of property where there is no clear ownership, etc. Since it is going to take UPRR some time to resolve this issue, authorization for the "Off-site PMZ" north of the UPRR property would occur through a separate Class 3 Permit modification application. At this time it may be prudent to revise the application to mention that UPRR plans to pursue the proposed PMZ, but remove details of the PMZ, and remove reference to the 720 day time frame mentioned in CP Table VIII. Provide clarification in the application that UPRR may pursue establishing the off-site PMZ for the residential properties under separate Permit modification submittal.	As provided in Compliance Plan Attachment XI.D, Appendix 5A, 52 of the 88 property owners have signed the Restrictive Covenant for the off-site PMZ. UPRR, through outside counsel, has conducted an extensive and diligent inquiry to locate either the landowner or a representatives for the landowner for the remaining 33 properties (written description of attempts to contact landowners, certified mailings, and landowner information). As summarized on Compliance Plan Attachment XI.D, Appendix 5 - Table 1, the reasons that the institutional control has not been signed range from unable to locate landowner, heirship issues for the properties, properties in probate/tax court, and church properties where the board of directors will not allow the pastor for the church sign the restrictive covenant. UPRR will continue to attempt to locate the landowners, or work with the legal entities for properties going through various stages of foreclosure.
T36	B	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	30 TAC §335.160 and	Incomplete	In Section XI.B, UPRR proposes to establish attenuation action levels (AALs) for the attenuation monitoring point wells. Revise CP Tables III and IIIA by creating an additional column B that lists the AAL for each COC. This should be completed for each PMZ in CP Table III and IIIA. The column heading should be labeled, *"Column B, Groundwater Protection Standards at Attenuation Monitoring Point (AMP)."*	CP Tables III and IIIA were revised to show the maximum AAL for each PMZ. Language was added to Section XI.D.3.h of the Compliance Plan on how graphs of alternative monitoring points (AMPs) will be interpreted and reported.
				30 TAC §350		In addition the changes noted in Comment T34, relabel the far left hand column in both CP Tables III and IIIA to state, *"Column C, Groundwater Protection Standards (GWPS) at Alternate Point of Exposure (APOE)."*	CP Tables III and IIIA were revised accordingly.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T37	B	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	Section XI.B, XI.D, XI.D.1, Vol I & II, RAP Worksheets and CP Table III and IIIA	30 TAC §335.160 and 30 TAC §350	Incomplete	In the event UPRR cannot provide a signed deed recordation and restrictive covenant for the City-owned ROW off-Site PMZ, the GWPS for each COC should be revised and based on residential protective concentration levels (PCLs).	
T38	B	Sections XI.B and XI.C, CP Tables IV and VIA	Section XI.C. 1.a(3), CP Tables IV and IV	30 TAC §335.165	Incomplete	Since the affected groundwater is subject to corrective action requirements under 30 TAC §335.167, and compliance monitoring is not applicable as indicated in Section XI.C, then CP Tables IV and IVA should be filled out and marked as reserved.	SWMU No. 1 will be monitored under the Compliance Monitoring Program. Therefore, CP Tables IV and IVA were developed for this revision and included in Section XI.
T39	B	Sections XI.C.1.a(1)(j) & XI.C.1.a(8) and CP Table VI	Sections XI.C.1.a(1)(j) & XI.C.1.a(8) and CP Table VI	30 TAC §335.162	Inconsistent	Pursuant to 30 TAC §335.162, the compliance period only applies to RCRA-regulated units. Since the applicant is proposing NFA for the former RCRA-regulated unit (SWMU-1), revise CP Table VI by removing the tabulated dates and reference to SWMU 1, and mark *"Reserved"* after the title.	SWMU No. 1 will be monitored under the Compliance Monitoring Program. Therefore, CP Tables IV and IVA were developed for this revision and included in Section XI.
T40	B	Section XI.D XI.D.1, Vol I & II, RAP Worksheets	Section XI.D XI.D.1, Vol I & II, RAP Worksheets	30 TAC §335.167 and §350.94, 350.33(a)(1), and 350.31(g)	Inconsistent	Area of Contamination: UPRR discussed the preliminary soil results from Area of Concern (AOC) 6 – Inactive Wastewater Lagoon (sampling conducted in May 2015). The objective of the additional soil sampling within AOC 6 was to evaluate the representative exposure concentration through a statistical approach with soil samples collected within the 0.5-acre exposure area. The evaluation is still ongoing. PBW proposed to the TCEQ to expand the exposure area beyond the default 0.5 acre, as allowed under TRRP. During the June9, 2015 meeting, staff explained that UPRR evaluate the soil data statistically within the 0.5-acre exposure area first. Any alternative exposure area proposed by UPRR would require further evaluation by TCEQ Toxicology.	Additional soil samples collected in 2015 with the soil summary tables, analytical data, DUSs, and boring logs are provided in CP Attachment D, RAP Appendix 2. Soil data from AOC 6 was evaluated statistically for one area, using the default 0.5-acre exposure area for commercial/industrial receptors. The deed recordation discussed in CP Attachment D, RAP Appendix 5 will have the land use restriction for the Site.
T41	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets	30 TAC §335.167 and §350.94, 350.33(a)(1), and 350.31(g)	Incomplete	UPRR discussed a preliminary change to the cap design by proposing the area along the rail line to be capped using asphalt making it into a paved road area rather than excavating the soils along the track and moving them to the capped area with the soils from AOC-6. The TCEQ pointed out that any changes to the Area of Contamination would require the document to be revised. The TCEQ also mentioned that the asphalt road would require its own separate mention in the on-site deed notice since the cap will be of different material than the clay cap of the soil relocation area and will also require different maintenance. UPRR agreed this could be incorporated into the deed recordation. Please include any updates to the cap design since the June 9, 2015 meeting.	The cap design plans are provided in CP Attachment D, RAP Attachment 2A-2. The revised AOC approach was approved by the TCEQ in a letter dated November 5, 2015 (a copy of the letter is provided in CP Attachment D, RAP, Appendix 3).
T42	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets	30 TAC §335.167, §350.33(f) and §350.94	Incomplete	As a follow-up to Comment No. T23 regarding the proposed Groundwater PCLE TI waiver demonstration; on July 22, 2015 the TCEQ Remediation Division Corrective Action Program referred the TI Waiver to TCEQ Remediation Technical Support Section for further evaluation. Any additional comments and/or request for information may be submitted under separate cover letter to UPRR on or before September 22, 2015.	Based on the TCEQ review memorandum dated October 13, 2015 and from the meeting held on November 4th, the TCEQ requested additional information on the TI. The TI Demonstration provided in CP Attachment D, RAP, Attachment 2G was revised to address the TCEQ comments.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T43	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3; and CP Table VIII	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3; and CP Table VIII	30 TAC §335.167 and §350.94(g)	Incomplete	UPRR has been conducting a DNAPL recovery pilot test from February 2013 to January 2015 on the portion of the site in which DNAPLs is recoverable in the A-TZ wells (e.g. MW-57A and MW78A) and B-TZ/C-TZ wells (e.g. MW-12B and MW-41B), and was effective in removing DNAPL. DNAPL recovery event will conclude in January 2015. Based on the results of the April 10, 2015 status report, UPRR is proposing to continue with the monthly DNAPL recovery since the pilot test has been effective and was confirmed in the June 9, 2015 meeting. The appropriate RAP pages including Attachments 2A-2, 2B-1, 2D-1 through 2D-3 should be revised as necessary. In addition, CP Table VIII should also be revised to include a proposed schedule for the continuation of recoverable DNAPL.	The RAP Attachments 2A-2, 2B-1, and 2D-1 through 2D-3 were revised to reflect the on-going DNAPL recovery activities at the wells designated "Corrective Action System Wells", and CP Table VIII was revised to incorporate the Annual DNAPL Report into the Annual GW Report.
T44	B	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	30 TAC §335.167 §350.94	Inconsistent	As previously mentioned in comments T33, T34 and T35 above, the establishment and boundaries of the PMZs need to be revised and clearly defined so that the "On-site PMZ" is the UPRR-owned property and the "City of Houston ROW Off-site PMZ is the City-owned property. Therefore, Attachments 2A-2, 2B-1, 2D-1 through 2D-3 which depicts PMZ boundaries needs to be revised, and relabeled accordingly as further explained in Comments T33 through T35. Figure XI.D.8 should be relabeled as "*CP Attachment A, Sheet 3 of XX, Plume Management Zone and Well Location Map*" to be consistent with the remainder of the CP Attachment A sheets.	The RAP Attachments 2A-2, 2B-1, and 2D-1 through 2D-3 were revised to reflect the On-Site PMZs (Main and West) and Off-Site PMZs. However, no response was developed for the reference to Figure XI.D.8 since the figure does not exist in this application. CP Attachment A Sheets 4, 5, and 6 of 6 showing the PMZs were revised showing the on-site compared to off-site PMZs.
T45	B	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	30 TAC §335.167 §350.94	Inconsistent	In addition to Comment T44 regarding the revisions to RAP Attachments 2A-2, 2B-1, 2D-1 through 2D-3. The "Off-Site PMZ " boundary for the residential properties should be removed and have a separate Figure with the proposed Off-site PMZ for the residential properties labeled "draft" with dashed lines and a footnote indicating, "this PMZ is proposed, and authorization pending resolution of obtaining off-site private land owners written consent". In the event this issue would be resolved at a later date, possible authorization for the "Off-site PMZ" north of the UPRR property would occur through a separate Class 3 Permit modification application.	Through meetings with the TCEQ, it was agreed that UPRR would submit all of the information on the properties including the signed Restrictive Covenants and the documentation for the properties that have not signed the institutional control. For the properties that have signed the Restrictive Covenants and the City of Houston ROW, this area of the Off-Site PMZ north of the Site accounts for approximately 21 acres (approx. 82% of the area) of the total 25.7 acres of the Off-Site PMZ north of the Site.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T46	B	XI.C.1.a.(2) and CP Table V XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	XI.C.1.a.(2) and CP Table V XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	30 TAC §335.161	Incomplete	UPRR proposes to delete background wells from the monitoring program. UPRR should revise CP Table V to retain ATZ well MW-8 and BTZ well P-12 as background wells for the overall site. It is general practice to include background well(s) to monitor for potential upgradient off-site sources that may migrate onto the site and possibly impacting achievement of remediation objectives and goals.	Background monitoring wells MW-8 and P-12 will serve as background wells for the Compliance Monitoring Program for the SWMU No. 1 area. CP Table V was updated to reflect these two wells as background wells.
T47	B	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3and CP Table V	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3and CP Table V	30 TAC §335.167 §350.94	Incomplete	Revise CP Table V to include the installation of proposed APOE wells MW-22A/MW-22B for the UPRR on-site PMZ.	Monitoring wells MW-22A and MW-22B are not intended as APOE wells, but rather as "Corrective Action Observation Wells". RAP Attachments 2A-2, 2B-1, and 2D-1 through 2D-3, as well as CP Attachment A, Sheets 4, 5, and 6 of 6 show MW-22A and MW-22B as Corrective Action Observation Wells.
T48	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments 2A-2, 2B-1, 2D-1 through 2D-3	30 TAC §335.167 §350.94(g)	Inconsistent	The recovery wells that are associated with the ongoing DNAPL recovery pilot test should be depicted on Attachments 2A-2, 2B-1, 2D-1 through 2D-3 and designated as corrective action system wells. This well designation will be consistent with the template language in the Permit Renewal. Please revise Attachments 2A-2, 2B-1, 2D-1 through 2D-3 accordingly.	RAP Attachments 2A-2, 2B-1, and 2D-1 through 2D-3, as well as CP Attachment A, Sheets 4, 5, and 6 of 6 show the DNAPL Recovery Wells as "Corrective Action System Wells".
T49	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments Page 4, RAP Executive Summary	30 TAC §335.167 and §350.94	Incomplete	UPRR explains the groundwater PCLE zones were mapped for the following GWBUs A-TZ, B-CZ/B-TZ and CTZ. One COC, Benzo(a)pyrene (BAP) was detected in the D-TZ during the most recent groundwater sampling event and was re-sampled and the concentration of BAP was confirmed. UPRR is proposing to further investigation the D-TX following the next sampling event. Revise CP Table VIII to include a proposed schedule of activities to complete vertical delineation of the GW PCLE zone. The assessment is required to define the vertical boundary of the PMZ.	UPRR proposes to collect a groundwater sample from MW-66D during the next scheduled sampling event for that well. Upon review of that sampling data, UPRR will develop a scope of work for the next phase of the evaluation of the D-TZ, as necessary. The CP Table VIII reflects the proposed schedule for the proposed activities at that well.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T50	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments and CP Table V	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments and CP Table V	30 TAC §335.167 and §350.94	Inconsistent	The proposed well designation for the off-site affected residential properties in which UPRR is seeking to establish a PMZ should be changed at this time. The Remediation Division recommends removing the wells from CP Table V as APOE wells and revising Attachments 2A-2, 2B-1, 2D-1 through 2D-3 and designating the wells as AMP wells or Corrective Action Observation Wells.	Based on meetings with the TCEQ, it was agreed that UPRR would proceed with the Off-Site PMZ (including AMPs and APOE wells) and submit all of the information on the properties including the signed Restrictive Covenants and the documentation for the properties that have not signed the institutional control. For the purposes of the RAP and Compliance Plan Table V, AMPs and APOE Wells are included in this submittal.
T51	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments and CP Table V	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets Attachments and CP Table V	30 TAC §335.167 and §350.94	Incomplete	UPRR proposes to delete background wells from the monitoring program. UPRR should revise CP Table V to retain ATZ well MW-8 and BTZ well P-12 as background wells for the overall site. It is general practice to include background well(s) to monitor for potential upgradient off-site sources that may migrate onto the site and possibly impacting achievement of remediation objectives and goals.	This is the same comment as T46, see response to T46.
T52	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	30 TAC §335.167 and§350.94	Incomplete	The implementation schedule provided in RAP Worksheet 6 should be merged with CP Table VIII. The proposed action items in Worksheet 6 will be executed after the RAP approval (issuance of the Permit Renewal) which will be the implementation of proposed activities listed in CP Table VIII.	CP Table VIII has been revised to match RAP Worksheet 6.
T53	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	30 TAC §335.167 and§350.94	Incomplete	In order to streamline reporting requirements and reduce the number of report submittals, the Remediation Division recommends that Post Response Action Care Reports (PRACR) be submitted as an attachment to the Annual Groundwater Monitoring Report. Thus, the Annual Groundwater Corrective Action Monitoring Report, submitted by March 31 of each year, would be the main report documenting all remediation and post response action activities at the site. Therefore, revise the implementation schedule contained in RAP Worksheet 6, and include the activity as a scheduled item in CP Table VIII.	RAP Worksheet 6 was revised to show one report (Annual Groundwater Monitoring Report (GMR) with Post-Response Action Care Report (PRACR) activities), and add the Annual GMR with the PRACR to CP Table VIII.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T54	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and CP Table VIII	30 TAC §335.167 and§350.94	Inconsistent	UPRR proposes to sample for CP Table IIIA COCs on a semiannual basis. Please specify which quarters or months of the calendar year in which the semiannual sampling event will occur for all monitoring wells. The text of the Permit will specify the sampling schedule. However, if certain wells are to be sampled on different schedules for CP Table IIIA, then the sampling schedule should be specified in CP Table VIII accordingly.	UPRR will add the proposed sampling schedule to CP Table IIIA.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T55	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and Appendix 4	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and Appendix 4	30 TAC §350.94 and §350.111 (c) and (e)	Incomplete	Revise the draft deed notice and restrictive covenant language provided in Appendix 4 the RAP that includes the following: 1. Be sure that the deed notice and restrictive covenant language follows the language in the TRRP Publication RG-366/TRRP-16, Institutional Controls under TRRP for further guidance. 2. For the UPRR –Facility Owned Property: there should only be deed notice which includes: A. Revised metes and bounds description of the portion(s) of the affected property to which the deed notice applies regarding the established on-site PMZ (refer to Comment T33); B. Since the Former HWPW area, Englewood Intermodal Yard area and UPRR Main Line Ballast area will each have different cap or covers the deed notice language should be revised to address the specific post-response action care needs. Along with the meets and bounds of the cap or cover. C. A revised plat map clearly demarcating the portion(s) of the affected property to which the deed notice applies. The map must contain a north arrow, a correlating map scale, and a legend identifying any symbols or abbreviations; D. A revised certification by a registered professional land surveyor so registered by the Texas Board of Professional Surveying attesting to the accuracy of the descriptions; E. Provide a tabulated list of the specific COCs and their associated PCLs as of the time of filing for each medium; and the TCEQ program and identifier number (SWR No. 31574)	The on-site deed recordation language was revised to address the comments under T55. Following the construction activities detailed in the Compliance Plan Attachment XI.D - RAP, the metes and bounds as well as the revised plat map of the different capped areas will be submitted to the TCEQ.
T56	B	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and Appendix 4	Section XI.D, XI.D.1, Vol I & II, RAP Worksheets. and Appendix 4	30 TAC §350.94 and §350.111 (c) and (e)	Incomplete	Revise the draft deed notice and restrictive covenant language provided in Appendix 4 of the RAP that includes the following: 1. Be sure that the deed notice and restrictive covenant language follows the language in the TRRP Publication RG-366/TRRP-16, Institutional Controls under TRRP for further guidance. 2. For the City of Houston ROW – City Owned Property: A. UPRR must provide written consent from the City of Houston in the form of a signed deed notice and restrictive covenant for the affected groundwater being closed/remediated to commercial/industrial PCLs pursuant to 30 TAC §350.111 (c) and (e) B. Revised metes and bounds description of the portion(s) of the affected property to which the deed notice applies regarding the established off-site PMZ (refer to Comment T34); C. A revised plat map clearly demarcating the portion(s) of the affected property to which the deed notice applies. The map must contain a north arrow, a correlating map scale, and a legend identifying any sues symbols or abbreviations; D. A revised certification by a registered professional land surveyor so registered by the Texas Board of Professional Surveying attesting to the accuracy of the descriptions; E. Provide a tabulated list of the specific COCs and their associated PCLs as of the time of filing for each medium; and the TCEQ program and identifier number (SWR No. 31574)	Following the construction activities detailed in the Compliance Plan Attachment XI.D - RAP, the metes and bounds as well as the revised plat map of the different capped areas will be submitted to the TCEQ. UPRR is in communication with the City of Houston regarding the restrictive covenant. The City has requested a survey of the ROW area that will fall within the Restrictive Covenant. Once the final survey is completed, the restrictive covenant will be submitted to the City of Houston Mayor's office for approval and then submitted to the TCEQ. We anticipate the signed Restrictive Covenant for the City ROW will be completed by February 29, 2016.

Technical NOD
Revision 2/December 2015

ID[1]	App. Part	App. Section	Location[2]	Citation	Error Type[3]	Deficiency Description/Resolution	Response
T57	B	Section XI.D.3.a(1) and CP Attachment XI.C	Section XI.D.3.a(1) and CP Attachment XI.C	30 TAC §335.163	Incomplete	Please revise the December 2014 Sampling & Analysis Plan (SAP) as follows: • Throughout the SAP, UPRR specifically references certain sections of the Permit application. The SAP should be very general standalone document and the language should be revised to reference only the Permit, and not the application. Because the Permit will be prepared based on the information contained in the application. For example in Section 1.0, first paragraph UPRR references the "Facility Site Map provided in CP Figure IX.A.1.a", and the language should be revised to reference the "Facility Site Map in Permit CP Attachment A". • Section 1.0, second paragraphs should deleted to remove reference to the PMZ, monitored natural attenuation, and referenced sections of the Permit application. • Section 1.0, the language in the third paragraph should be revised to reference groundwater monitoring program shall be performed as part of the corrective action monitoring program as specified in the Permit Section XI. • Section 1.0, the third paragraph, only references the sampling of monitoring wells listed in CP Table V and as depicted in CP Attachment A maps of the Permit because APOE wells will not be the only wells sampled as part of the corrective action monitoring program. The last sentence of the third paragraph that references the RAP should be deleted. • Section 1.0 should be revised to provide a reference to site specific Health and Safety/Field Emergency Plans. • Section 2.0 Please revise to include procedure for monitoring weather conditions during sampling event. • Revise Section 3.1 to indicate the rate of drawdown during micro-purging should be 0.1 m or less. • Revise Section 3.1 to provide a discussion on the type of purging and sampling equipment that will be used.	The SAP was revised in accordance with the comments listed, see CP Attachment C
T57 Cont.						· Page 6, Section 3.4 should also reference monitoring wells listed in CP Table V and as depicted in CP Attachment A maps of the Permit. • Page 6, Section 3.4, the last sentence of the first paragraph should be revised to indicate that the sampling frequency for all wells shall be specified in the Permit, or just delete this sentence. • Bottom Page 6, Section 3.4 UPRR references CP Attachment C Table I, should be changed to "SAP Table I" so it clear to the reader. • Bottom Page 6, Section 3.4 second paragraph, first sentence the language should be revised to indicate reference both CP Tables III and IIIA specify the specific list of analytes to be monitored as part of the corrective action program. • Bottom Page 6, Section 3.4 second paragraph, the last three sentences should be deleted from the SAP. The evaluation of metals in groundwater should be added as an action item in CP Table VIII, compliance schedule. The TCEQ recommends adding this evaluation as Item F of CP Table VIII that will be included in the Draft Permit and not as part of the SAP. • Bottom Page 14, Section 4.5 the entire last paragraph, should be deleted and revised to indicate that the data validation shall be conducted in accordance with the requirements of Section XI.F. of the Permit. Because the Permit has specific performance based template language that will specify the requirements for evaluating groundwater monitoring results and will provide guidance when an action will need to taken.	The SAP was revised in accordance with the comments listed, see CP Attachment C

PART A PERMIT RENEWAL

REPLACEMENT PAGE

Signature Page

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator Signature: _____ Date: 11-13-2015

Name and Official Title (type or print) JOEL STRAFELDA GENERAL MANAGER ENVIRONMENTAL MANAGEMENT

Operator Signature: _____ Date: _____

Name and Official Title (type or print) _____

Operator Signature: _____ Date: _____

Name and Official Title (type or print) _____

Operator Signature: _____ Date: _____

Name and Official Title (type or print) _____

To be completed by the operator if the application is signed by an authorized representative for the operator

I, _____ hereby designate _____
(operator) (authorized representative)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

_____
Signature

(Note: Application Must Bear Signature & Seal of Notary Public)

Subscribed and sworn to before me by the said Joel Strafelda on this 13th day of November, 2015.

My commission expires of the 7th day of December, 2017

_____
Notary Public in and for Douglas County, Nebraska

GENERAL NOTARY - State of Nebraska
JULIE A. ZABROWSKI
My Comm. Exp. December 7, 2017

Table III-1 Hazardous Wastes and Management Activities

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Soil generated primarily by the boring of monitor wells around the clean-closed wood preserving operation surface impoundment.	0001301H	F034 K001				X			0
Aqueous Waste with low surfactants. Groundwater generated from drilling activities for investigative purposes.	0909101H	F034 K001				X			0
Creosote sludge, soil mixture generated as part of corrective action performed on-site.	0912489H	F034 K001				X			0
Groundwater generated from purging of various monitor wells for investigative purposes.	0914101H	F034 K001				X			1020 lbs
Soil derived from the boring of monitor wells for investigative purposes.	0915301H	F034 K001				X			0
Plastic and used personal protective equipment generated as a result of monitor well and/or soil sampling.	0917406H	F034 K001				X			0
Spent Solvent	0501203H	D001 D018 D039				X			0
Recovered creosote NAPL from groundwater monitoring wells	0918219H	F034 K001 U051				X			750 lb

Table III-1 Hazardous Wastes and Management Activities (continued)

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Drilling mud from boring monitor wells for investigative purposes	1481514H	D002				X			0
Purge water generated as part of groundwater monitoring and investigation	1482110H	D002				X			0
Wood treatment (creosote) related wastes	488, 609	U188				X			0

[1]"Storage" means the holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, or stored elsewhere.

[2]"Processing" means the extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of hazardous waste, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material from the waste or so as to render such waste non-hazardous or less hazardous; safer for transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. The "transfer" of solid waste for reuse or disposal as used above, does not include the actions of a transporter in conveying or transporting solid waste by truck, ship, pipeline, or other means. Unless the Executive Director determines that regulation of such activity is necessary to protect human health or the environment, the definition of "processing" does not include activities relating to those materials exempted by the Resource Conservation and Recovery Act, 42 U.S.C. 6901 **et seq.**, as amended.

PART B PERMIT RENEWAL

SECTION I – REPLACEMENT PAGES

Signature Page

JOEL STRAFELDA
GENERAL MANAGER
ENVIRONMENTAL MANAGEMENT

I, Joel Strafelda, _____,
(Operator) (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: 11-13-2015

To Be Completed By The Operator If The Application Is Signed By An Authorized Representative For The Operator

I, _____, hereby designate _____
(Print or Type Name) (Print or Type Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

_____
Signature

SUBSCRIBED AND SWORN to before me by the said Joel Strafelda

On this 13th day of November, 2015

My commission expires on the 7th day of December, 2017

Julie A Zabrowski
Notary Public in and for Douglas County, Nebraska

GENERAL NOTARY - State of Nebraska
JULIE A. ZABROWSKI
My Comm. Exp. December 7, 2017

(**Note:** Application Must Bear Signature & Seal of Notary Public)

D. Application Type and Facility Status

1. ☒ permit ☒ amendment ☐ modification
☐ new ☒ major ☐ Class 3
☐ interim status ☐ minor ☐ Class 2
☒ renewal ☐ Class 11
☐ RD&D ☐ Class 1
☒ Compliance Plan

2. Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?
☐ Yes ☒ No
If Yes, state the other TCEQ program authorizations requested.

3. Does the application contain confidential material? ☐ Yes ☒ No

If Yes, cross-reference the confidential material throughout the application to Section XIII: Confidential Material, and submit as a separate Section XIII document or binder conspicuously marked "CONFIDENTIAL".

4. In either column, check all that apply.

☐ proposed hazardous waste management facility	☒ existing hazardous waste management facility
☐ on-site	☒ on-site
☐ off-site	☐ off-site
☐ commercial	☐ commercial
☐ recycle	☐ recycle
☐ land disposal	☐ land disposal
	☐ areal or capacity expansion
	☒ compliance plan

5. Is the facility within the Coastal Management Program boundary (for Class 3 Modifications, Permit Renewals, and New Permit applications only)? ☐Yes. ☒No.

6. Provide a brief description of the portion of the facility covered by this application, including the changes for which an amendment or modification is requested.

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit			
Global	Global Facility name change from Union Pacific Railroad Company Houston Tie Plant to Houston to Union Pacific Railroad Company Houston Wood Preserving Works	Class 1 Modification	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit Cover Page	Registered Agent for Service changed to: C T Corporation System 1999 Bryan Street, Suite 900 Dallas, TX 75201-3136 Phone: 214-979-1172	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision I.A. Attachment A	The legal description has been updated for the Facility.	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision I.A. Attachment B	The Facility Plan has been updated	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision III.D. Table III.D.-Inspection Schedule	Table was updated	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision VII.C.1. Post-Closure financial Assurance Requirements	Revised to reflect updated post-closure costs. 2015 costs to closure are estimated to be $201,050.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision VII.C.1. Table VII.E.1. – Permitted Unit Post Closure Cost Summary	Table revised to reflect updated post-closure costs.	Minor Amendment	30 TAC §305.62(c)(2)
Compliance Plan			
Compliance Plan Cover Page	Name of Permittee and Site Owner – address changed (this information was changed in a 2012 permit modification, however an updated permit was not issued): Union Pacific Railroad Company 1400 Douglas St., STOP 1030 Omaha, NE 68179	Class 1 Modification	30 TAC §305.62(c)(2)
Compliance Plan Cover Page	Registered Agent for Service changed to: C T Corporation System 1999 Bryan Street, Suite 900 Dallas, TX 75201-3136 Phone: 214-979-1172	Class 1 Modification	30 TAC §305.62(c)(2)
Compliance Plan Provision I.B. Attachment A	Attachment A was updated to reflect current site conditions.	Minor Amendment	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Compliance Plan Provision I.B. Table I – Waste Management Units Subject to Groundwater Corrective Action and Compliance Monitoring	Table revised to include SWMU and AOC subject to corrective action (section C.).	Major Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision I.D. Table II – Solid Waste Management Units and/or Areas of Concern Addressed for which Corrective Acton applies	Table updated to latest format which includes information on affected media.	Minor Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision II.A. Table V – Designation of Wells	Table V was updated to reflect current site conditions – Point of Compliance and Background Wells were removed while Alternate Point of Exposure Wells (PMZ Wells) were added.	Major Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision II.A. Table III – Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard	Table III was updated to reflect current site conditions – the table was expanded to include the On-Site PMZ,	Minor Amendment	30 TAC §305.62(c)(2)
Application Updates			
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section II	Section II.A – Facility Siting information was updated.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section II	Figure II.F.1 – Information was updated to include the most recent Flood Insurance Map.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section III	Sections III.A, C, and D were updated to reflect current site conditions.	Minor Amendment	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section V	Information was updated and expanded to reflect the current Site boundary, conditions at the Site, address typographical errors, and administrative changes.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section VI	Information was updated to reflect current conditions at the Site and include investigative data collected since the previous permit update in 2003.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section VII	Information was updated to reflect current conditions at the Site including the change to Compliance Monitoring sampling activities at SWMU No. Post closure care activities were updated.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section IX	The checklist information was consolidated from other sources and included in the permit.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section XI	Information was updated and expanded to reflect the current Site conditions, include Compliance Monitoring sampling activities at SWMU No. 1 and include the Response Action Plan prepared to address the facility wide soil and groundwater contamination.	Class 3 Modification	30 TAC §305.69(k)(C)(7)(a) and (b)

7. Total acreage of the facility being permitted: 128 acres

8. Identify the name of the drainage basin and segment where the facility is located:
San Jacinto River basin, Segment No. 1007

E. Facility Siting Summary

Is the facility located or proposed to be located:

1. within a 100-year floodplain?
☐ Yes ☒ No

2. in wetlands?
☐ Yes ☒ No

3. in the critical habitat of an endangered species of plant or animal?
☐ Yes ☒ No

PART B PERMIT RENEWAL

SECTION II – REPLACEMENT PAGES

II. Facility Siting Criteria

For all new hazardous waste management facilities or areal expansions of existing hazardous waste management facilities provide a Site Selection Report for the facility which includes all information regarding Unsuitable Site Characteristics found in 30 TAC 335 Subchapter G. The report must address each requirement applicable to the type of activity submitted in the application. Reference specific rule numbers whenever possible. Supporting information may be cross-referenced to other parts of this application such as Section V - Engineering Report or Section VI - Geology Report, but information submitted in previous applications must be fully reproduced herein. In addition, provide the information in Sections II.A through II.G below.

For permit renewals provide a Site Selection Report for the facility which includes all information regarding Unsuitable Site Characteristics found in 30 TAC 335 Subchapter G. In addition, provide the information in Sections II.A through II.B below. The applicant may resubmit the information submitted with the original permit application provided this information has not changed. For a renewal this information is necessary to ensure a complete application is received.

Not Applicable – Closed Surface Impoundment was closed.

Existing hazardous waste management facilities and capacity expansions of existing facilities need only complete Section II.F. and the applicable portions of II.G. Please note however, that additional technical information may be requested to address any facility siting characteristics noted in Section I.E.

A. Requirements for Storage or Processing Facilities, Land Treatment Facilities, Waste Piles, Storage Surface Impoundments, and Landfills.

Is the facility located or proposed to be located:

1. in wetlands? [as applicable: 30 TAC 335.204(a)(2), (b)(2), (c)(2), (d)(2), and/or (e)(2)]
☐ Yes ☒ No

   Provide the source of information.

   According to the US Fish and Wildlife Service Wetlands Mapper (http://www.fws.gov/wetlands/Data/Mapper.html), no wetlands are located on or near the Site.

If Yes, the TCEQ shall not issue a permit for a new hazardous waste management facility or areal expansion of an existing facility into wetlands, pursuant to 30 TAC 335.205(a)(1).

2. in the critical habitat of an endangered species of plant or animal? [as applicable: 30 TAC 335.204(a)(8), (b)(10), (c)(9), (d)(9), and/or (e)(11)]
☐ Yes ☒ No

   Provide the source of information.

   No appreciable ecological habitat is located at the Site.

If Yes, then submit in Section V information demonstrating that design, construction, and operational features will prevent adverse effects on such critical habitat.

3. on the recharge zone of a sole-source aquifer? [30 TAC 335.204(a)(3), (b)(3), (c)(3), (d)(3), and/or (e)(3)]
☐ Yes ☒ No

Provide the source of the information.

According the EPA Region 6, the Site does not overlie a sole-source aquifer (http://www.epa.gov/region6/water/swp/ssa/index.htm).

If Yes, then for storage and processing facilities (excluding storage surface impoundments), submit in Section V information demonstrating that secondary containment is provided to preclude migration to groundwater from spills, leaks, or discharges.

Note: Land treatment facilities, waste piles, storage surface impoundments, and landfills may not be located on the recharge zone of a sole-source aquifer.

4. in an area overlying a regional aquifer? [as applicable: 30 TAC 335.204(a)(4), (b)(4), (c)(4), (d)(4), and/or (e)(4)]
☒ Yes ☐ No

Provide the source of information.

See Section VI of the Permit Renewal Application.

If Yes, then submit site-specific information in Section V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1).

5. in areas where soil unit(s) are within five feet of the containment structure, or treatment zone, as applicable, that have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM, or a hydraulic conductivity greater than 10-5 cm/sec? [as applicable: 30 TAC 335.204(a)(5), (b)(5), (c)(5), (d)(5), and/or (e)(5)]
☐ Yes ☒ No

Provide information to verify the above.

According to the United States Department of Agriculture Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), the Site is underlain by Urban Land.

If Yes, then provide additional information in Sections V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1)

6. in areas of direct drainage within one mile of a lake at its maximum conservation pool level, if the lake is used to supply public drinking water through a public water system? [as applicable: 30 TAC 335.204 (a)(6), (b)(7), (c)(6), and/or (e)(8)].
☐ Yes ☒ No

Provide information to verify the above.

The nearest surface water body to the Site is Buffalo Bayou, located approximately 1.6 miles to the southwest. See Section VI of the Permit Renewal Application for more information.

If Yes, then provide information in Section V demonstrating compliance with 30 TAC 335.205(a)(1).

7. in areas of active geologic processes, including but not limited to erosion, submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cuttings, or earthquakes? [as applicable: 30 TAC 335.204(a)(7), (b)(8) ,(c)(7), (d)(7),

and/or (e)(9)]
☐ Yes ☒ No

Provide the source of the information.

See Section VI of the Permit Renewal Application.

If Yes, then specify in Section V the design, construction, and operational features of the facility that will prevent adverse effects resulting from the geologic processes.

8. within 30 feet of the upthrown side or 50 feet of the downthrown side of the actual or inferred surface expression of a fault that has reasonably been shown to have caused displacement of shallow Quaternary sediments or of man-made structures? [as applicable: 30 TAC 335.204(a)(9), (b)(12) ,(c)(11), (d)(11), and/or (e)(13)]
☐ Yes ☒ No

Provide the source of information.

See Section VI of the Permit Renewal Application.

If Yes, then specify in Section V the design, construction, and operational features that will prevent adverse effects resulting from any fault movement.

If a fault is found to be present, the width and location of the actual or inferred surface expression of the fault, including both the identified zone of deformation and the combined uncertainties in locating a fault trace, must be determined by a qualified geologist or geotechnical engineer and reported in Section VI.

B. Additional Requirements for Land Treatment Facilities [30 TAC 335.204(b)]

Not Applicable

Is the land treatment facility located or proposed to be located:

1. Within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(6) and 335.205(a).

2. either
   a. within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.F design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   b. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.
   ☐ Yes ☐ No

If Yes, then submit Section V.F design, construction and operational features, which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

3. on a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(11) and 335.205(a)(1).

C. Additional Requirements for Waste Piles [30 TAC 335.204(c)]

Not Applicable

Is the waste pile located or proposed to be located:

1. either
   a. within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.E design, construction, and operational features on the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   b. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.
   ☐ Yes ☐ No

If Yes, then submit Section V.E design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

2. on a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste pile or an areal expansion of an existing waste pile, pursuant to 30 TAC 335.204(c)(10) and 335.205(a)(1).

D. Additional Requirements for Storage Surface Impoundments [30 TAC 335.204(d)]

Is the storage surface impoundment located or proposed to be located:

1. either
   c. within 1000 feet of an area of active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☒ No

If Yes, then submit in Section V.D design, construction and operational features of the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   d. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula?
   ☐ Yes ☒ No

If Yes, then submit in Section V.D design, construction and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

2. on a barrier island or peninsula?
☐ Yes ☒ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste storage surface impoundment or an areal expansion of an existing storage surface impoundment, pursuant to 30 TAC 335.204(d)(10) and 335.205(a)(1).

E. Additional Requirements for Landfills (and Surface Impoundments Closed as Landfills with Wastes in Place)

Not Applicable

Is the landfill located or proposed to the located:

1. within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(6) and 335.205(a)(1).

2. (*for commercial hazardous waste landfills*) in the 100-year flood plain of a perennial stream that is delineated on a flood map adopted by the Federal Emergency Management Agency after September 1, 1985, as zone A1-99, VO, or V1-30?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(7) and 335.205(a)(1).

3. Either
   a. Within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   b. Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barriers island or peninsula.
   ☐ Yes ☐ No

If Yes, then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

4. On a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(12) and 335.205(a)(1).

F. Flooding

1. Identify whether the facility is located within a 100-year flood plain [40 CFR 270.14(b)(11)(iii)]. This identification must indicate the source of data for such determination and include a copy of relevant documentation (e.g., flood maps, if used and/or calculations). The boundaries of the hazardous waste management facility must be shown on the flood plain map. If the facility is not subject to inundation as a result of a 100-year flood event, do not complete F.2. through F.4. below. An applicant for a proposed hazardous waste landfill, areal expansion of a hazardous waste landfill, or a commercial hazardous waste land disposal unit may not rely solely on flood plain maps prepared by the Federal Emergency Management Agency (FEMA) or a successor agency for this determination.

According to the June 9, 2014 Federal Emergency Management Agency Flood Insurance Rate Map (Map Number 48201C0690M), the facility is not located within the 100-year flood plain. The northern portion of the facility is identified as being located in an area with 0.2% chance of flooding annually. The southern portion of the Site is in an area of minimal flood hazard. Figure II.F.1 included in the attached Section II.F shows the boundaries of the facility within the flood plain map.

2. If the facility is located within the 100-year flood plain the applicant must provide information detailing the specific flooding levels and other events (e.g., Design Hurricane projected by Corps of Engineers) which impact the flood protection of the facility. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, construction, operating, or maintaining the facility to withstand washout from a 100-year flood.

   Not Applicable

3. State whether any flood protection devices exist at the facility (e.g., flood walls, dikes, etc.), designed to prevent washout from the 100-year flood.
   a. ***If Yes***, provide in Section V an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

      Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

   b. ***If No***, the applicant shall provide in Section V a plan for constructing flood protection devices and a schedule including specific time frames for completion. Provide engineering analyses to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

      Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

   Not Applicable

4. If applicable, and in lieu of the flood protection devices from above, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. [40 CFR 270.14(b)(11)(iv)(c)] The procedures should include:
   a. Timing of such movement relative of flood levels, including estimated time to move the waste, to show that such movement can be completed before flood waters reach the facility. Indicate which specific events shall be use to begin waste movement (e.g., Hurricane warning, Flash Flood watch, etc.);
   b. A description of the location(s) to which the waste will be moved and a demonstration that these facilities will be eligible to receive hazardous waste in accordance with appropriate regulations (i.e., a permitted facility);
   c. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use; and

d. The potential for accidental discharges of the waste during movement and precautions taken to preclude accidental discharges.

Not Applicable

G. Additional Information Requirements

1. For a new hazardous waste management facility, include a map of relevant local land-use plans and descriptions of the major routes of travel in the vicinity of the facility to be used for the transportation of hazardous waste to and from the facility covering at least a five (5)-mile radius from the boundaries of the facility. [30 TAC 305.50(a)(10)(A)&(D)]

   Not Applicable

2. For a new commercial hazardous waste management facility as defined in 30 TAC 335.202 or the subsequent areal expansion of such a facility or unit of that facility, indicate on the map the nearest established residence, church, school, day care center, surface water body used for a public drinking water supply, and dedicated public park.

   Not Applicable

3. For new commercial hazardous waste management facilities, submit the following: [30 TAC 305.50(a)(12)(A)]
   a. the average number, gross weight, type, and size of vehicles used to transport hazardous waste;
   b. the major highways nearest the facility irrespective of distance; and
   c. the public roadways used by vehicles traveling to and from the facility within a minimum radius of 2.5 miles from the facility.

   Not Applicable

4. Include the names and locations of industrial and other waste-generating facilities within 0.5 miles for a new on-site hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

   Not Applicable

5. Include the names and locations of industrial and other waste-generating facilities within 1.0 miles for a new commercial hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

   Not Applicable

6. For existing land disposal facility units provide documentation that the information required by 30 TAC 335.5 has been placed in the county deed records. If previously submitted, please reference the submittal by date and registration number.

   Submitted as part of the original Permit Application in May 1991 was the deed

recordation of the removal of the wastes from the surface impoundment in accordance with the closure plan approved by the Texas Department of Water Resources in 1984. A copy of that Deed Notice is included as Attachment II.G.6.

7. If a surface impoundment or landfill (including post-closure) is to be permitted, provide exposure information to accompany this application and in accordance with 30 TAC 305.50(a)(8) and 40 CFR 270.10(j). This information will be considered separately from the TCEQ application completeness determination.

   Not Applicable – Hazardous waste is not stored, treated or disposed in the closed surface impoundment. In 1984 surface impoundment was closed by excavating the soils and materials contained within. Groundwater at the SWMU No. 1 has achieved TCEQ Remedy Standard A response action objectives. Based on the removal of the wastes from the unit, including the clay liner, and groundwater that meets Remedy Standard A, there are no potential pathways of human exposure to hazardous wastes or constituents resulting from documented releases related to SWMU No. 1.

8. For a requested capacity expansion of an existing hazardous waste management facility, please provide in Section VI.A.1.a the requested fault delineation information. [30 TAC 305.50(a)(4)(F)]

   Not Applicable

PART B PERMIT RENEWAL

SECTION III – REPLACEMENT PAGES

III. Facility Management

A. Compliance History and Applicant Experience

See the attached report for specific information regarding the Compliance History and Applicant Experience.

Provide listings of all solid waste management sites in Texas owned, operated, or controlled by the applicant as required by 30 TAC 305.50(a)(2).

For a new commercial hazardous waste management facility, provide a summary of the applicant's experience in hazardous waste management as required by 30 TAC 305.50(a)(12)(F).

B. Personnel Training Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit.

Provide an outline of the facility training plan which includes all the information required by 40 CFR 264.16. Indicate which training will be repeated annually.

C. Security

See the attached report for specific information regarding the plan for Site security.

Describe how the facility complies with the security requirements of 40 CFR 264.14 or submit a justification demonstrating the reasons for requesting a waiver of these requirements.

D. Inspection Schedule

See the attached report for specific information regarding the Site inspection schedule.

Provide an inspection schedule summary for the facility which reflects the requirements of 40 CFR 264.15(b), 264.33 and, where applicable, the specific requirements in 40 CFR 264.174, 264.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.347, 264.552, 264.574, 264.602, 264.1033(f), 264.1034, 264.1052, 264.1053(e), 264.1057, 264.1058, 264.1063, 264.1084, 264.1085, 264.1086, 264.1088, 264.1101(c)(4) and 270.14(b)(5). The inspection schedule should reflect the requirements described below. The schedule should encompass each type of hazardous waste management (HWM) unit (i.e., facility component) and its inspection requirements. For incorporation into a permit, complete Table III.D. - Inspection Schedule for all units to be permitted.

The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to the release of hazardous waste constituents to the environment or which may pose a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

The owner or operator must develop and follow a written schedule for inspecting other basic elements such as monitoring equipment, safety and emergency equipment, security devices, the presence of liquids in leak detection systems, where installed, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

If the owner or operator of a facility which contains a waste pile wishes to pursue an exemption from the groundwater monitoring requirements for that waste management unit, the inspection schedule must

include examination of the base for cracking, deterioration, or other conditions that may result in leaks. The frequency of inspection must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and subsurface stability).

E. Contingency Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit at an inactive facility.

(This portion of the application does not apply to post closure applications.) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this section. Provide a Contingency Plan which includes all the information required by 40 CFR Part 264 Subparts C and D, except for 40 CFR 264.56(d)(1) and 30 TAC 335.153(2). This plan must also include a drawing of the facility which shows the location of all emergency equipment. In addition, complete the following tables to summarize information expressed in more detail in the plan.

1. Arrangements with Local Authorities

   Complete Table III.E.1. - Arrangements With Local Authorities to indicate arrangements (if made) with local authorities to familiarize local fire and police departments, local hospitals, equipment suppliers, and local and State emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes. Provide documentation of the attempts and any arrangements made with local authorities and emergency response teams.

2. Emergency Coordinator's List

   For inclusion into a permit, list in Table III.E.2. - Emergency Coordinators the persons qualified to act as emergency coordinator. List the alternates in the order in which they will assume responsibility.

3. Emergency Equipment List

   For inclusion into a permit, list in Table III.E.3. - Emergency Equipment all types of emergency equipment at the facility [such as fire-extinguishing systems, spill-control equipment, communications and alarm systems (internal and external), and decontamination equipment], if this equipment is required. Briefly outline the equipment capabilities.

4. Waiver from Preparedness and Prevention Requirements

   If the owner or operator wishes to request a waiver from any of the preparedness and prevention requirements, he must submit a justification demonstrating the reasons for requesting the waiver, as discussed below.

F. Emergency Response Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit at an inactive facility.

For a new commercial hazardous waste management facility, the application shall contain evidence sufficient to demonstrate that emergency response capabilities are available or will be available before the facility first receives waste. An emergency response plan must be provided which satisfies the requirements of 30 TAC 305.50(a)(12)(C) and (D). This plan must show that the proposed facility has sufficient emergency response capabilities for managing a reasonable worst-case emergency condition associated with the operation of the facility. (For financial assurance requirements associated with the emergency response activities, please see Section VIII.C.3.)

1. Practice Drills

   In addition to the contingency plan required under 40 Code of Federal Regulations Part 270.14(b)(7), provisions specifying procedures and timing of practice facility evacuation drills are required. Provide a description and a frequency for facility evacuation drills.

2. If a private corporation, municipality or county group will provide emergency response actions at the proposed facility, include a copy of the contract for this type of agreement with this application or state that documentation will be submitted before the facility accepts wastes.

3. Historical weather data for the area should be documented and submitted. Information regarding how emergency response operations may be affected by weather conditions should be included. (Local rainfall extremes, average rainfall amounts, average wind speeds and directions, potential for major weather events such as hurricanes, tornados, icy conditions, flash flooding etc., should be addressed.)

4. A definition of a worst-case emergency for the proposed facility should be described in the application. This worst-case emergency should take into account the possible complications involved with a facility emergency compounded by adverse weather conditions. It should also detail spills, fires, explosions, etc. This worst case scenario should be developed with the help of local governmental entities where possible. Emergency planning should include both unexpected emergencies and emergencies occurring as a result of a predictable event such as a flood or hurricane. For areas which are prone to hurricanes and flash flooding, the worst case which allows for a realistic situation should be used. For example, response teams should be well versed in reacting to events such as a 100-year flood.

5. A training program for personnel who will respond to these types of emergencies must be provided and must include the requirements described in OSHA Federal Register 1910 and EPA Federal Register 311, the Texas Hazard Communication Act, SARA Title III 302, 304, 311, 312, and 313. If emergency response actions are contracted out, the contracted employees must be properly trained and documentation of this training must be maintained on-site. All responders to emergencies at the proposed facility must be involved in training and drills at the facility in order to be thoroughly familiar with the facility and its operations.

6. The application must include a description and identification of first-responders (i.e. all pertinent facility personnel, local responders, and contractors). The duties of the facility employee who is to be the on-scene coordinator (OSC) must be described. Additional information must be provided detailing the OSC's role in the emergency response activities. This person must have the authority to commit the resources needed to carry out the Emergency Response Plan. His duties must be thoroughly described so that it is clear whether he will remain in control once the emergency response team arrives or whether he will relinquish control to another incident commander upon that person's arrival on the scene. Additionally, there must be a qualified OSC on-site or on call 24 hours a day. The name, address and phone numbers (home and work) of the OSC(s) must be listed in the Emergency

Response Plan. Where more than one person is listed, one must be named as the primary OSC and others must be listed in the order in which they will assume responsibility as alternates.

7. Local or regional emergency medical services or hospitals which have experience in hazardous materials training must be identified in the application. The names, addresses and phone numbers of the hospitals or medical centers should be listed here and updated as necessary. Additionally, maps showing the quickest routes to the medical services must be provided. A description of decontamination procedures for injured personnel prior to transport to medical services must also be provided. The decontamination and transport of injured people to appropriate medical centers must be included in the emergency evacuation training and drills.

8. A pre-disaster plan which includes training drills must be included in the application. This plan should include a schedule for staging evacuations of the facility and for emergency response training drills. At least two evacuations and two emergency response drills should occur annually. The plan should also include additional drills for responding to "predictable" emergencies such as floods and hurricanes. The plan must include the following (or must reference applicable sections of the Contingency Plan): a description of arrangements already in place with local authorities; emergency phone numbers; internal communication or alarm systems and proper alarm codes; a list of all types of emergency equipment at the facility, including a physical description and the capabilities of each item on the list, and the location of each item (a map would be useful here); a description of decontamination equipment; an evacuation plan including signals, evacuation routes and alternate evacuation routes; listing of pertinent first responder emergency phone numbers, and codes for other types of communication devices; and a description of actions that will be performed in the event that a "predictable" emergency occurs.

9. Describe the mechanism which will be used to notify first responders and appropriate local governmental entities that an emergency has occurred. Also describe the mechanism which will be used to notify all applicable governmental agencies when an incident occurs (i.e., TCEQ, Texas Parks and Wildlife, General Land Office, TCEQ Office of Air Quality, Texas Department of Health, and the Texas Railroad Commission).

10. Evidence must be provided that shows coordination with the Local Emergency Planning Committee (LEPC) and any local comprehensive emergency management plan. The applicants should be able to show compliance with SARA Title III.

11. Any medical response capabilities proposed for the facility property must be detailed in the application.

ATTACHMENT III.D
POST·CLOSURE INSPECTION SCHEDULE RECORD FORM
UNION PACIFIC RAILROAD HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS SWR NO. 31547, EPA ID TXD000820266

Inspection Date and Time: _____

Inspector's Name: _____

Inspector's Signature: _____

Facility Units(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection	Status	
			Acceptable	Unacceptable
Security Fencing	Damaged, broken/loose fencepost	Semi-annually & after storm/flood event		
	Loose or broken barbed wire			
	Damaged fence			
	Damaged gate			
	Inoperable gate locks			
Warning Signs	Missing, damaged or illegible signs	Same as above		
Surveyed Benchmarks	Benchmarks missing or damaged	Same as above		
Groundwater Monitor Wells	Well cap condition poor, broken, poor seal	Same as above		
	Lock function sticks, inoperable			
	Casing condition bent, torn, missing			
	Concrete pad cracked, broken, missing			
Final Cover and Cap	Settlement or subsidence	Same as above		
	Damage or erosion to clay cap			
	Erosion/undercutting at cap perimeters			
	Shrubs/trees with long root systems present			
Drainage Structures	Grass requires mowing, treatment or repairs	Same as above		
	Debris or sediment restrict flow			
	Erosion or undercutting			
	Inadequate drainage away from landfill cap			
Comments:				

Note: In accordance with 40 CFR 264.15(b) and (d), copies of the inspetion records will be maintained for at least three years from the date of inspection. Place of sotrage will be PBW, Round Rock, Texas.

PART B PERMIT RENEWAL

SECTION IV – REPLACEMENT PAGES

Table IV.B. - Wastes Managed In Permitted Units

No.	Waste	EPA Hazardous Waste Numbers	TCEQ Waste Form Codes and Classification Codes
001/SWMU 1	Wood treatment (creosote) related wastes*	K001, F034, U051, U188	219, 301, 488, 609

*Historical Wastes Managed, unit was closed in 1984 with releases to groundwater

PART B PERMIT RENEWAL

SECTION V – REPLACEMENT PAGES AND

ADDITIONAL INFORMATION

processing, the waste managed in each unit, the rated capacity of each unit, overall dimensions of each unit, containment volume, and whether ignitable, reactive, or incompatible waste will be stored in each unit.

If a tank will manage ignitable or reactive waste, as indicated on Table V.C, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.198 and provide drawings demonstrating compliance with any applicable buffer zone requirements and 40 CFR 264.17.

If a tank will manage incompatible waste, as indicated on Table V.C, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.199.

Submit written assessments that were reviewed and certified by an independent, qualified licensed Professional Engineer that attests to the structural integrity and suitability of handling the hazardous waste for each tank system, as required under 40 CFR 264.191-264.192 for existing tanks which do not have secondary containment meeting the standards of 40 CFR 264.193. The engineer signing the written assessment must make the certification specified in 40 CFR 270.11(d). The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.

If a tank has been de-rated or if the permitted capacity is otherwise different from the design capacity, specify in the engineering report.

D. Surface Impoundments

See the attached report for specific information regarding the closed surface impoundment.

Provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(6), 335.168, 335.169, and 40 CFR 264.19, 264.220, 264.221, 264.222, 264.223, 264.226(a) and (c), 264.227, 264.229-264.231, and 270.17.

For storage surface impoundments at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(d). For any surface impoundment to be closed as a landfill (where wastes will remain after closure of the impoundment) at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(e).

For all impoundments, include in the report the following information.

1. Complete Table V.D.1 - Surface Impoundments and list the surface impoundments, covered by this application, to be permitted. List the waste(s) managed in each unit and the rated capacity or size of each unit.

   Table V.D.1 is attached.

2. If a surface impoundment will manage ignitable or reactive waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.229.

   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

3. If a surface impoundment will manage incompatible waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.230.

Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

4. If a surface impoundment will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.D.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.231.

   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

5. Describe the surface impoundment. A plan view and cross-section of the surface impoundment should be included with the engineering report.

   The surface impoundment SWMU No. 1 was not an engineered structure, nor was it designated to serve as a landfill. It was used from 1979 to 1982 for the disposal of contaminated surface soils containing K001 type wastes.

   SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

   The cross-sections prepared by Geo Associates and included in the original 1991 permit application are included in the Figures section as Exhibits 5, 6 and 7 (SPTCo, 1991).

6. Freeboard
   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

   Specify the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error. [40 CFR 264.221(g)] Show that adequate freeboard will be available to prevent overtopping from a 100-year, 24-hour storm.

   If the impoundment is inflow sensitive, it should be equipped with a high-level alarm based on a different level sensor than that used for automatic control.

7. Waste Flow
   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

   Describe the means that will be used to immediately shut off the flow of waste to the impoundment to prevent overtopping or in the event of liner failure, and include appropriate detailed drawings.

   If the surface impoundment is a flow-through facility describe the flow of waste, including a hydraulic profile.

the Commission. Plans and specifications for both new and existing surface impoundments must demonstrate conformity with 30 TAC 335.168 and 40 CFR 264.221.

Not Applicable. The surface impoundment was closed in 1984.

11. Run-on Diversion

    Describe in detail how the surface impoundment system will manage stormwater run-on away from the surface impoundment. Stormwater run-on must be diverted away from a surface impoundment. Use at least a 100-year, 24-hour rainfall event in the design and analysis of diversion structures. Where dikes are used to divert run-on, they must be protected from erosion. Include all analyses used to calculate run-on volumes.

    Not Applicable. The wastes stored in the surface impoundment were removed and the unit closed in 1984. Because no wastes are stored or managed at SWMU No. 1, no stormwater management is necessary at the unit.

12. The Commission may approve an alternate design or operating practice for a surface impoundment if the owner or operator demonstrates that such design or operating practices, together with location characteristics [40 CFR 264.221(d)]:
    a. Will prevent the migration of hazardous constituents into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system required by 40 CFR 264.221; and
    b. Will allow detection leaks of hazardous constituents through the top liner at least as effectively.

    Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

13. Exemption from Double-Liner Requirements for Monofills [264.221(e)]

    Owners or operators of hazardous waste surface impoundment monofills will be exempted from the double-liner requirements if the Commission finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics are at least as effective as a double liner in preventing migration of hazardous constituents to the groundwater or surface water. If an exemption is sought, submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the groundwater or surface water at any future time.

    Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was closed in 1984.

E. Waste Piles

Not Applicable. This permit renewal application is for the closed surface impoundment.

This section applies to owners or operators of industrial solid waste facilities that store or process hazardous waste in piles. A hazardous waste pile that will be closed with wastes left in place must be managed as a landfill. Existing portions of waste piles are those areas that were listed on the original Part A and on which wastes have been lawfully placed.

Table V.D.1. - Surface Impoundments

Permit Unit No.	Surface Impoundment	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions	Distance from lowest liner to groundwater	Action Leakage Rate (if required)	Unit will manage Ignitable, Reactive, Incompatible, or F020, F021, F022, F023, F026, and F027 Waste (state all that apply)
1	Closed Surface Impoundment	001	No waste stored.	Closed (rated capacity before closure was 5065 yd^3)[2]	180 ft x 106 ft x 7ft (before closure)	Closed. No waste or liner system in place.	Not Required	No Waste stored. The surface impoundment was closed in 1984.

[1]from Table IV.B, first column

[2]Estimated amount of waste and contaminated soil removed in 1984.

Table V.D.6. - Surface Impoundment Liner System
Not Applicable – Unit was closed in 1984 by removal of waste and liner

Surface Impoundment	Primary Liner			Secondary Liner			Clay Liner		
	Material	Permeability (cm/sec)	Thickness	Material	Permeability (cm/sec)	Thickness	Material	Permeability (cm/sec)	Thickness

V. ENGINEERING REPORT

ENGINEERING REPORT FOR THE
PART B PERMIT APPLICATION
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

TABLE OF CONTENTS

Page

LIST OF PART B APPLICATION FORM TABLES ..... V-ii

LIST OF FIGURES ..... V-ii

V.A. GENERAL ENGINEERING REPORTS V-1
V.A.1. General Information V-1
V.A.2. Features to Mitigate Unsuitable Site Characteristics V-1
V.A.3. Construction Schedules V-1

V.D. SURFACE IMPOUNDMENTS V-2
V.D.5. SWMU No. 1 ..... V-2

V.E REFERENCES V-3

LIST OF PART B APPLICATION FORM TABLES

Table

V.D.1. Surface Impoundments

LIST OF FIGURES

Exhibit 5, 6 and 7 were prepared by Geo Associates and submitted to the TCEQ as part of the original Part B Permit in 1991 (SPTCo, 1991). These figures were taken directly from that report. Figures V.A.1 and V.A.2 were prepared by PBW.

Figure

V.A.1 Site Map

V.A.2 Topographic Map

Exhibit 5 Cross Section Location Map

Exhibit 6 Interpreted Geologic Cross Section A-A’

Exhibit 7 Interpreted Geologic Cross Section B-B’

V.A. GENERAL ENGINEERING REPORTS

V.A.1. General Information

Solid Waste Management Unit (SWMU) No. 1 is an inactive surface impoundment and is a grass-covered section of land located at the southwest corner of the facility property (Figure V.A.1). SWMU No. 1 was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of SWMU No. 1 was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

In 1984, Southern Pacific Transportation Company (SPTCo) closed SWMU No. 1 by excavating the soils and materials contained within. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed.

V.A.2. Features to Mitigate Unsuitable Site Characteristics

This section does not apply since the unit is closed.

V.A.3. Construction Schedules

This section does not apply since the unit is closed.

V.D. SURFACE IMPOUNDMENTS

V.D.5. SWMU No. 1

The surface impoundment SWMU No. 1 was not an engineered structure, nor was it designated to serve as a landfill. It was used from 1979 to 1982 for the disposal of contaminated surface soils containing K001 type wastes.

SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

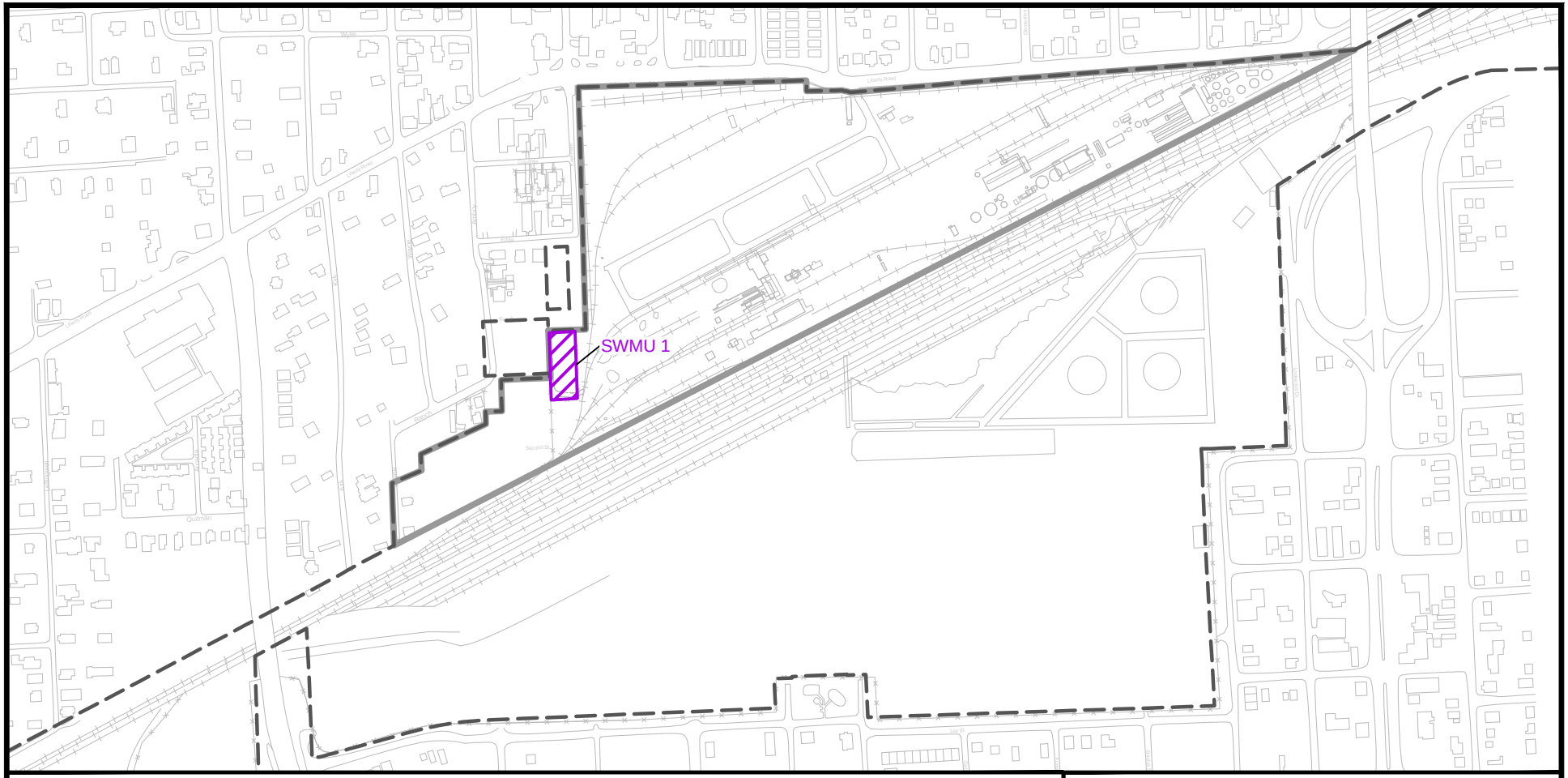
The cross-sections prepared by Geo Associates and included in the original 1991 permit application are included in the Figures section as Exhibits 5, 6 and 7 (SPTCo, 1991).

In 1984 SWMU No. 1 was closed by excavating the soils and materials contained within and groundwater sample results have been compliant with the TCEQ Remedy Standard A requirements for groundwater protection for the past eight years.

V.E REFERENCES

Southern Pacific Transportation Company (SPTCo), 1991. *Part B Permit Application – Post Closure Care and Compliance Plan for the Closed Surface Impoundment.* Volumes I-III. May 13.

FIGURES



EXPLANATION

- UPRR Property Boundary
- UPRR Facility Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad

N

Approx. Scale in Feet

0 250 500

SOURCE:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

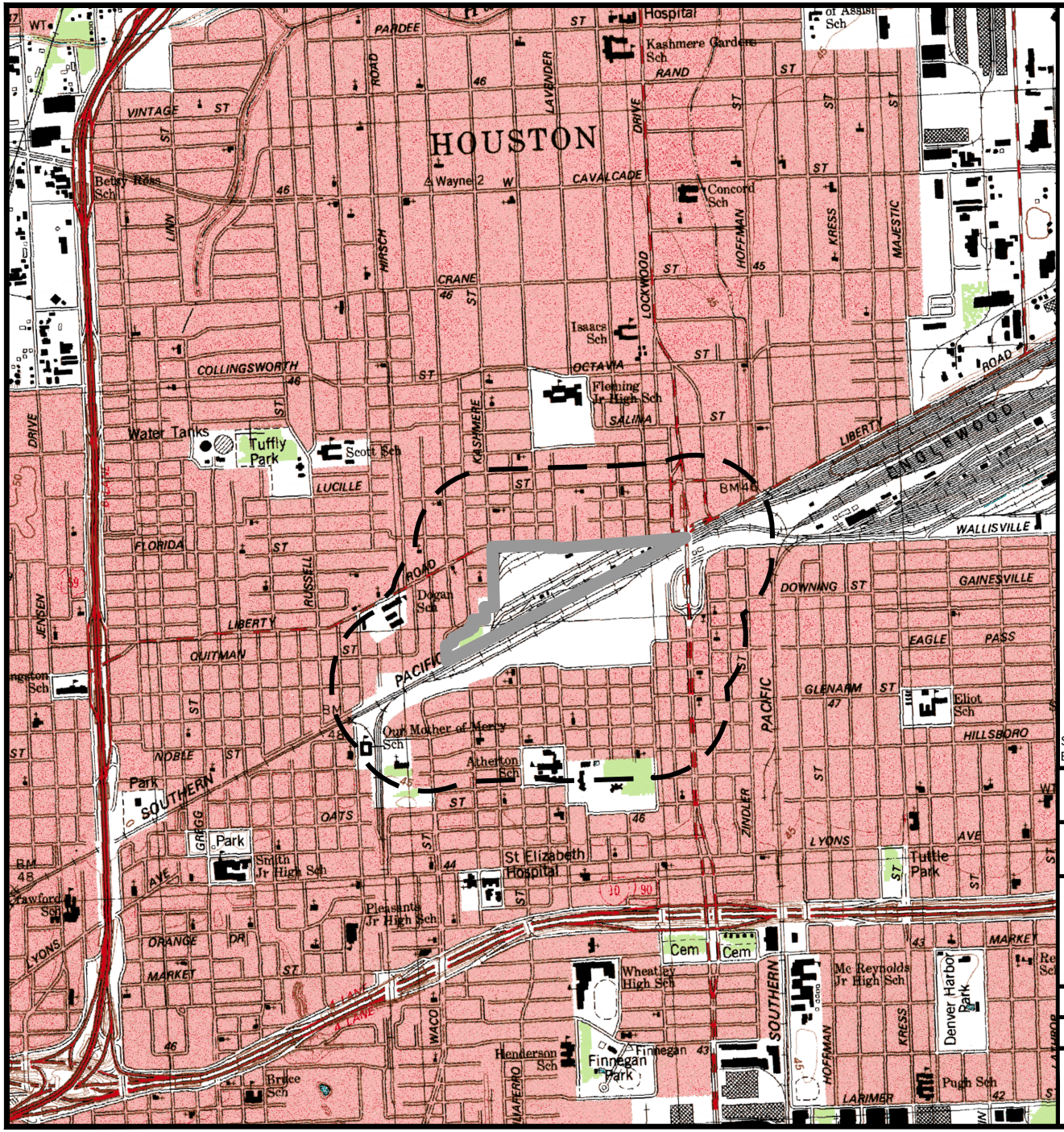
HOUSTON WOOD PRESERVING WORKS

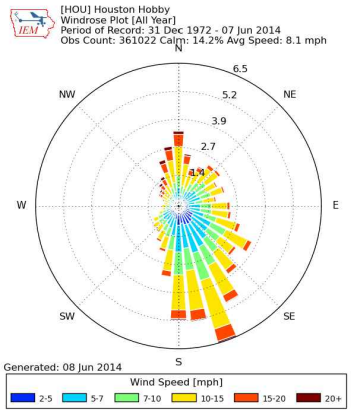
Figure V.A.1

SITE MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS





EXPLANATION

- Site Property Boundary, Fence
- 1000 Ft Radius
- Residential (All other surrounding property land use is industrial)

N

Scale in Feet

0 1000 2000

QUADRANGLE LOCATION

SOURCE: Base map from www.tnris.gov, Settegast, TX 7.5 min. USGS quadrangle dated 1982.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure V.A.2

TOPOGRAPHIC MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

PART B PERMIT RENEWAL

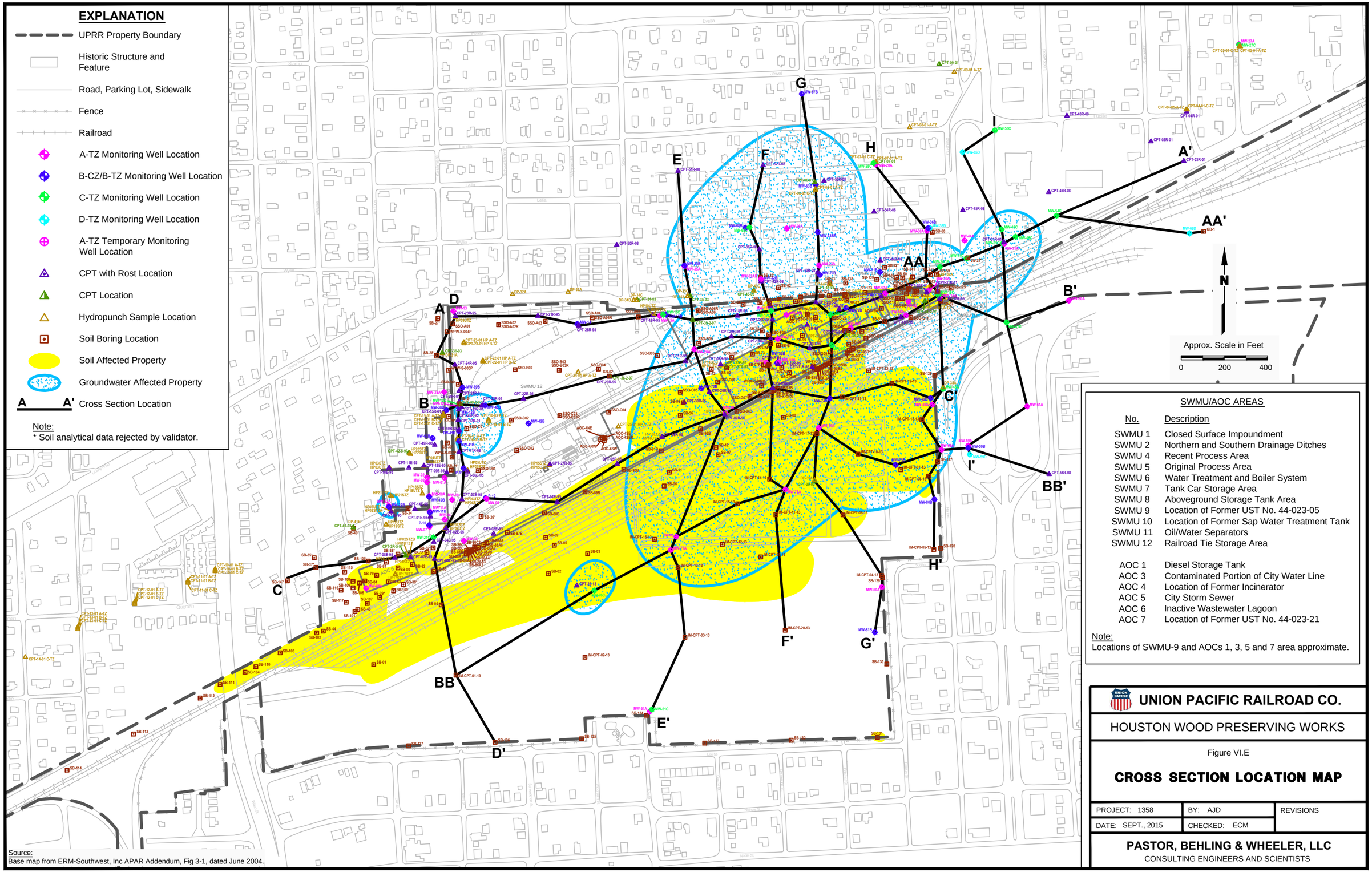
SECTION VI – REPLACEMENT PAGE AND

ADDITIONAL INFORMATION

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- A-TZ Temporary Monitoring Well Location
- CPT with Rost Location
- CPT Location
- Hydropunch Sample Location
- Soil Boring Location
- Soil Affected Property
- Groundwater Affected Property
- A A' Cross Section Location

Note:
* Soil analytical data rejected by validator.



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure VI.E

CROSS SECTION LOCATION MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Table VI.A.4. - WASTE MANAGEMENT AREA SUBSURFACE CONDITIONS
Information taken from Original Part B Application (STPCo, 1991)

Boring Number	Depth Below Grade	Stratum	USC Symbol	Liquid Limit	Plasticity Index	Percent Passing #200 Sieve	Permeability	Percent Porosity
7	4-6	1 – Shallow Sandy Clay	SC	47	34	NA	NA	NA
7	10-12	1 – Shallow Sandy Clay	SC	NA	NA	NA	$1.7x10^{-8}$	NA
9	6-8	1 – Shallow Sandy Clay	SC	54	39	NA	NA	NA
9	10-12	1 – Shallow Sandy Clay	SC	NA	NA	NA	$7.6x10^{-9}$	NA
9	12-14	1 – Shallow Sandy Clay	SC	32	17	NA	NA	NA
P11	2-4	1 – Shallow Sandy Clay	SC	43	30	NA	NA	NA
P11	8-10	1 – Shallow Sandy Clay	SC	NA	NA	54	NA	NA
P13	10-12	1 – Shallow Sandy Clay	SC	41	26	NA	NA	NA
8	12-14	2 – EL +35 ft Sand	SP	NA	NA	42	NA	NA
8	20-22	3 – Intermediate Sandy Clay	SC	NA	NA	79	NA	NA
9	20-22	3 – Intermediate Sandy Clay	SC	NA	NA	NA	$5.3x10^{-8}$	NA
P10	23-25	3 – Intermediate Sandy Clay	SC	42	27	NA	NA	NA
P10	28-30	3 – Intermediate Sandy Clay	SC	NA	NA	NA	$3.9x10^{-7}$	NA
P11	23-25	3 – Intermediate Sandy Clay	SC	NA	NA	83	NA	NA
P11	28-30	3 – Intermediate Sandy Clay	SC	29	12	NA	NA	NA
P12	28-30	3 – Intermediate Sandy Clay	SC	36	20	NA	NA	NA
B13	23-25	3 – Intermediate Sandy Clay	SC	57	37	NA	NA	NA
P10	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P11	33-35	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P11	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P12	33-35	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P12	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P10	43-45	5 – Deep Clay	CL	NA	NA	NA	$4.4x10^{-9}$	NA
P11	43-45	5 – Deep Clay	CL	65	42	NA	NA	NA
P12	48-50	5 – Deep Clay	CL	61	38	NA	NA	NA
B13	43-45	5 – Deep Clay	CL	65	41	NA	NA	NA

Maximum depth: 50 feet below grade
-4 feet above MSL

PART B PERMIT RENEWAL

SECTION VII – REPLACEMENT PAGES AND

ADDITIONAL INFORMATION

Table VII.D. - Unit Post-Closure Cost Estimate

Task	Cost
SWMU No. 1 Groundwater Monitoring Groundwater sample collection (10 wells x 20 hrs./sampling event x 2 sampling events/yr) Groundwater sample analysis (10 wells x 1 samples/well x 2 events/yr) Maintenance Mowing – Monthly Service ($400/mo)	 **$9,400** **$3,600** **$4,800**
subtotal	**$17,800**
Contingency (10% minimum)	**$1,780**
Total Unit Post-Closure Care Cost x 10 yrs.	**$195,800 (2015) (10 years)**
SWMU No. 1 Monitoring Well Plugging and Abandonment P&A (10 wells at $750 each) - one time cost	 **$7,500**
subtotal	**$7,500**
Contingency (10% minimum)	**$750**
Total Unit Post-Closure Care Cost (one time cost)	**$8,250 (2015) (one time cost)**

Total Permitted Facility Post-Closure Cost (all unit costs combined)	**$204,050 (2015)**

Table VII.E.2. - Permitted Unit Post-Closure Cost Summary

Existing Unit Post-Closure Cost Estimate	
Unit	Cost
SWMU No. 1	**$204,050 (2015)**
Total Existing Unit Post-Closure Cost Estimate	**$204,050 (in 2015 Dollars)[1]**

Proposed Unit Post-Closure Cost Estimate	
Unit	Cost

[1]As units are added or deleted from these tables through future permit amendments or modifications, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

VII. CLOSURE AND POST-CLOSURE CARE PLANS

CLOSURE AND POST-CLOSURE CARE PLANS
PART B PERMIT APPLICATION
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

TABLE OF CONTENTS

Page

LIST OF PART B APPLICATION FORM TABLES ..... VII-ii

VII.C. POST-CLOSURE VII-1
VII.C.1. Post-Closure Care VII-2
VII.C.1.a. Inspection Schedule VII-3
VII.C.1.b. Security VII-3
VII.C.1.c. Monitoring Wells VII-3
VII.C.1.d. Corrective Action VII-3
VII.C.2. Facility Contact VII-3
VII.C.2.a. Facility Records VII-3
VII.C.2.b. Amendment of Plan VII-4
VII.C.2.c. Certification of Completion of Post-closure Care VII-4
VII.C.3. Proposed Post-Closure Use of Property VII-4
VII.C.4. Closure Under Interim Status VII-4

VII.D. POST-CLOSURE COST ESTIMATE VII-5

LIST OF PART B APPLICATION FORM TABLES

Table

VII.D. Unit Post-Closure Cost Estimate
VII.E.2 Permitted Unit Post-Closure Cost Summary
VII.G Post-Closure Period

LIST OF TABLES

Table

VII.A.1 SWMU No. 1 A-TZ Unit Groundwater Monitoring Data
VII.A.2 SWMU No. 1 B-TZ Unit Groundwater Monitoring Data

LIST OF FIGURES

Figure

VII.A Site Map
VII.B 2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
VII.C Dibenzofuran Concentrations vs Time - A-TZ Unit
VII.D Naphthalene Concentrations vs Time - A-TZ Unit
VII.E Dibenzofuran Concentrations vs Time - B-TZ Unit
VII.F Naphthalene Concentrations vs Time - B-TZ Unit

VII.C. POST-CLOSURE

Background

This Post-Closure Care Plan was prepared to describe maintenance, monitoring, and response activities for the Houston Wood Preserving Works facility at 4910 Liberty Road, Houston, Texas. Currently, post-closure care includes the semi-annual monitoring of the two uppermost groundwater bearing units, the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ).

Solid Waste Management Unit (SWMU) No. 1 is an inactive surface impoundment and is a grass-covered section of land located at the southwest comer of the facility property (Figure VI.A). SWMU No. 1 was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of SWMU No. 1 was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to Southern Pacific Transportation Company (SPTCo) facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

In 1984, SPTCo clean closed SWMU No. 1 by excavating the soils and materials contained within the unit. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. The area was then divided into 50-foot grids which were randomly selected for sampling. Between 10 and 15 grab samples not more than 6-inches deep were homogenized and analyzed for K001 listed waste parameters and polycyclic aromatic hydrocarbons (PAHs). When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed (Rollins, 1984).

In 1991, a series of six soil borings were drilled within the same six grid areas that were sampled during the 1984 closure operations (Geo Associates, 1991). Four samples were collected from each of the borings

from the following zones: the surficial clay fill, between the clay fill and the uppermost sand, the uppermost sand, and below the uppermost sand unit. These samples were analyzed for benzene, toluene, ethylbenzene and xylene (BTEX), total petroleum hydrocarbons (TPH) and semi-volatiles.

Bis (2-ethylhexyl) phthalate was detected in two samples at concentrations well below the TCEQ Texas Risk Reduction Program (TRRP) Protective Concentration Limits (PCL). Xylene, ethylbenzene and toluene were also detected, but at concentrations well below the PCL. The 1991 soil sampling results indicated that the source of contamination had been removed by the 1984 closure activities (SPTCo, 1991).

In 1984, the facility then began investigating and monitoring the shallow ground water in the vicinity of SWMU No. 1. Between 1984 and 1991, nine groundwater monitoring wells were installed in the upper zone, and three piezometers were installed in the lower permeable zone. Hydrogeological data collected from these wells and piezometers indicate hydraulic conductivity between the zones. Analytical data compiled from 1984 until 1991 indicated that benzene, toluene, naphthalene, 2,4-dimethylphenol, and phenol were the most frequently detected parameters and that naphthalene was the parameter detected at the highest concentrations. Even though the SWMU was clean closed in 1984, a groundwater release was identified and the facility entered into post-closure care in 1994, updated in 2005, and groundwater monitoring has taken place on a semi-annual basis since that time.

With the 2015 semi-annual analytical data, the SWMU No. 1 monitoring wells have been compliant for 20 consecutive semi-annual monitoring events (10 years). Tables VII.A.1 and VII.A.2 show groundwater monitoring data for the past 165 years (since 2000) for the A-TZ and B-TX, respectively. Concentration versus time graphs for COCs in the A-TZ (2-methylnaphthalene (Figure VII.B), dibenzofuran (Figure VII.C), and naphthalene (Figure VII.D)) and the B-TZ (dibenzofuran (Figure VII.E) and naphthalene (Figure VII.F)) demonstrate that COC concentrations in the A-TZ and B-TZ POC wells have shown a steady decrease over time. Groundwater at the SWMU No. 1 has achieved TCEQ Remedy Standard A response action objectives and no further action is necessary to protect human health and the environment.

The TCEQ issued a No Further Action in the Technical Notice of Deficiency (NOD) dated August 5, 2015 regarding the corrective action monitoring for SWMU No. 1. Therefore SWMU 1 will be monitored through the compliance monitoring program. A Compliance Monitoring Program has been developed and is included in the revised Section IX.

VII.C.1. Post-Closure Care

The primary components for post-closure care include the following items:

- Maintain the perimeter security fences, gates and warning signs;
- Maintain the integrity of the groundwater monitoring wells; and
- Monitor the quality of groundwater.

VII.C.1.a. Inspection Schedule

Site inspections will be performed to document site conditions during the pose-closure care period. The inspections are scheduled semi-annually and will coincide with the semi-annual sampling events, with additional inspections to be conducted after major storm events and flood conditions.

VII.C.1.b. Security

Security controls will be evaluated at each inspection. The integrity of the entire perimeter fence for the closed area will be inspected. The base of the fence area will be inspected for erosion which may result in space beneath the fence large enough for passage of animals or people. Hinges and locks on gates will be checked for signs of wear or breakage.

VII.C.1.c. Monitoring Wells

Monitoring wells will be inspected for signs of damage, including well pads, casing, locks and protective covers.

VII.C.1.d. Corrective Action

Corrective action will be taken within 30 days of discovering a problem at the site, facility unit and/or monitoring wells.

VII.C.2. Facility Contact

The facility contact is:

Mr. Geoffrey B. Reeder, P.G.
Manager, Environmental Site Remediation
Union Pacific Railroad Company
24125 Aldine Westfield Rd.
Spring, TX 77373
Phone: 281-350-7197
Fax: 402-233-2351
gbreeder@up.com

VII.C.2.a. Facility Records

All plans, reports, financial assurance information, correspondence, and related records will be maintained at the following location:

Union Pacific Railroad Company
1400 Douglas St., STOP 1030
Omaha, NE 68179
Phone: 402-544-5000

In accordance with 40 CFR 264.15(b)(2) and (d), copies of all inspection records will be maintained for at least three years from the date of inspection.

VII.C.2.b. Amendment of Plan

In accordance with 40 CFR 264.118(d), a written notification of or a request for a permit modification will be submitted to authorize a change in the post-closure plan. The request will be submitted at least 60 days prior to the proposed change in design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan. A copy of the amended post-closure plan will be included in the notification or request.

VII.C.2.c. Certification of Completion of Post-closure Care

The Site is currently in year 20 (2014) of the 30 years required for post-closure care. In accordance with 40 CFR 264.120, no later than 60 days after completion of the established post-closure care period for the closed hazardous waste disposal unit, UPRR will submit, by registered mail, a certification that the post-closure care period was performed in accordance with the post-closure care plan. The certification will be signed by UPRR and an independent registered professional engineer.

VII.C.3. Proposed Post-Closure Use of Property

UPRR intends to maintain the Site as an open vegetated area with restricted access. The regulated unit will be part of the on-site Plume Management Zone (PMZ) discussed in detail in Section XI – Compliance Plan Attachment D of this Permit application. Any future use of the site would be contingent upon approval of the TCEQ.

VII.C.4. Closure Under Interim Status

The surface impoundment is not closed under interim status.

VII.D. POST-CLOSURE COST ESTIMATE

A detailed cost estimate for post-closure care is summarized in Table VII.D of the Part B renewal application form included with the post-closure care plan. These costs cover semi-annual sampling and mowing for the ten years left for the post-closure care period.

TABLES

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-01A	3/27/2000	0.022	0.24	0.005	0.009	0.0007 JB	**0.12**	0.01	0.14	0.13	0.068	0.005
MW-01A	9/25/2000	**0.36**	0.46	0.005	0.024	0.002 J	**0.33**	0.022	0.32	0.068	0.23	0.011
MW-01A	4/27/2001	0.012	0.17	0.004	0.005	0.0005 U	0.091	0.007	0.092	0.24	0.042	0.003
MW-01A	9/28/2001	0.0003 U	0.36	0.005	0.007	0.0005 U	**0.18**	0.01	0.17	0.065	0.1	0.006
MW-01A	3/19/2002	0.033	0.12	0.003	0.004	0.0006 J	0.065	0.006	0.07	0.11	0.028	0.003
MW-01A	9/25/2002	0.002	0.26	0.002	0.008	0.0004 U	**0.17**	0.01	0.17	0.005	0.033	0.005
MW-01A	3/17/2004	0.005221	0.04226	0.000785	0.001854	0.000973	0.0194	0.003337	0.02334	0.000919	0.002194	0.00117
MW-01A	3/4/2005	0.0882	0.224	0.00326	0.00754	0.00035 U	**0.101**	0.00935	0.124	0.12	0.0182	0.00362
MW-01A	7/19/2005	**0.1036**	0.245	0.00221	0.0101	0.000356 U	**0.11**	0.0139	0.137	0.0216	0.0233	0.00593
MW-01A	9/8/2005						**0.133**					
MW-01A	1/6/2006	0.00169	0.0937	0.00387	0.0021	0.000356 U	0.0143	0.00557	0.0221	0.000519	0.00065	0.0025
MW-01A	7/28/2006	0.0205	0.163	0.00182	0.00613	0.00009 U	0.0639	0.0079	0.0792	0.00292	0.00698	0.00376
MW-01A	1/23/2007	0.000262	0.0509	0.00137	0.00226	0.00009 U	0.00839	0.00251	0.0155	0.000302	0.000229	0.00105
MW-01A	7/18/2007	0.00133 U	0.11	0.00114 U	0.000952 U	0.00352 U	0.00849 J	0.00696 J	0.0514	0.00124 U	0.00336 J	0.00304 J
MW-01A	1/28/2008	0.00044 U	0.0415	0.00099	0.00129	0.00022 U	0.00129	0.00234	0.0162	0.00044 U	0.00022 U	0.00107
MW-01A	7/16/2008	0.0109	0.126	0.00143	0.00267	0.00137 J	0.00774	0.00923	0.0659	0.0168	0.00177	0.00417
MW-01A	1/22/2009	0.0069	0.054	0.0007 U	0.0012 J	0.0012 U	0.0058	0.0024 J	0.028	0.0008 U	0.001 J	0.001 J
MW-01A	7/22/2009	0.0017 J	0.085	0.0005 U	0.0011 J	0.0033 U	0.0037 J	0.0037 J	0.04	0.0029 J	0.0005 U	0.0019 J
MW-01A	1/22/2010	0.0019 J	0.04	0.0005 U	0.0006 U	0.0033 U	0.0016 J	0.0017 J	0.022	0.0043 J	0.0005 U	0.0005 U
MW-01A	7/14/2010	0.0009 U	0.068	0.0005 U	0.0017 J	0.0033 U	0.0044 J	0.004 J	0.04	0.0006 U	0.0011 J	0.0021 J
MW-01A	1/11/2011	0.0009 U	0.07	0.0011 J	0.0021 J	0.0033 U	0.0007 U	0.0025 J	0.039	0.0006 U	0.0005 U	0.0011 J
MW-01A	7/13/2011	0.0068	0.1	0.0011 J	0.0029 J	0.003 J	0.0054	0.0062	0.056	0.0005 U	0.002 J	0.0028 J
MW-01A	1/31/2012	0.0005 U	0.029	0.0005 U	0.0005 U	0.0005 U	0.0045 J	0.0012 J	0.0013 J	0.0005 U	0.0005 U	0.0005 U
MW-01A	7/11/2012	0.012	0.084	0.0017 J	0.003 J	0.0005 U	0.025	0.0047 J	0.041	0.0005 U	0.0033 J	0.0021 J
MW-01A	1/9/2013	0.00125	0.117	0.00222	0.000285 J	0.00163	0.0141	0.00602	0.0564	0.00219	0.00388	0.00261
MW-01A	7/11/2013	0.00193	0.098	0.00122	0.0022	0.000356 U	0.00264	0.00399	0.0323	0.0169	0.00109	0.00165
MW-01A	1/8/2014	0.00222	0.0895	0.00093	0.003	0.000838 J	0.00951	0.00257	0.0369	7.41E-05 U	0.00175	0.0013
MW-01A	7/2/2014	0.00865	0.0848	0.00138	0.00326	0.000349 U	0.0132	0.0043	0.0369	0.074	0.00537	0.00204
MW-01A	1/15/2015	0.00007 U	0.0594	0.00104	0.00139	0.00533	0.000541	0.00246	0.0209	0.000121 J	0.000335 J	0.00105
MW-01A	7/8/2015	0.00063	0.086	0.0009	0.0018	0.0002	0.0032	0.0034	0.038	0.00083	0.0012	0.0015

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-02	3/27/2000	0.0004 J	0.022	0.0006 J	0.002	0.0006 JB	0.017	0.002 J	0.016	0.011	0.001 J	0.0007 J
MW-02	9/25/2000	0.005	0.033	0.001 J	0.002	0.0005 U	0.033	0.003	0.031	0.24	0.002	0.001 J
MW-02	4/26/2001	0.0009 J	0.01	0.0003 J	0.002 J	0.0005 U	0.008	0.003	0.009	0.028	0.002	0.002 J
MW-02	9/28/2001	0.001 J	0.012	0.0005 J	0.002 J	0.0005 U	0.01	0.002 J	0.01	0.034	0.003	0.001 J
MW-02	3/13/2002	0.0006 J	0.015	0.0004 J	0.001 J	0.0005 U	0.012	0.001 J	0.013	0.006	0.001 J	0.0007 J
MW-02	9/24/2002	0.0004 J	0.02	0.0004 J	0.001 J	0.0004 U	0.014	0.001 J	0.014	0.013	0.001 J	0.0007 J
MW-02	3/17/2004	0.001694	0.03018	0.000418 J	0.001494	0.000172 U	0.01945	0.001861	0.02035	0.000604	0.002468	0.00088
MW-02	3/4/2005	0.00008 J	0.0394	0.0004 J	0.00114	0.00035 U	0.0152	0.00421	0.0268	0.00161	0.00024 J	0.00183
MW-02	7/19/2005	0.00007 U	0.0031	0.00006 U	0.00032 J	0.000352 U	0.00245	0.000796	0.00268	0.00006 U	0.00036 J	0.00042 J
MW-02	1/5/2006	0.00046 J	0.0142	0.00128	0.000857	0.00037 U	0.0152	0.00113	0.0148	0.0053	0.00024 J	0.00041 J
MW-02	7/28/2006	0.000622	0.0098	0.0002	0.000783	0.00018 J	0.00767	0.00123	0.00604	0.0106	0.00103	0.00063
MW-02	1/23/2007	0.00008 U	0.00675	0.00015 J	0.000542	0.00009 U	0.00488	0.000625	0.00479	0.000406	0.00005 J	0.0003
MW-02	7/18/2007	0.0024 J	0.0256	0.00114 U	0.00138 J	0.00352 U	0.0174	0.00165 J	0.0157	0.0188	0.00167 J	0.00095 U
MW-02	1/28/2008	0.00038 U	0.017	0.00028 U	0.000922	0.00049 J	0.0106	0.0015	0.0119	0.000827	0.000532	0.00082
MW-02	7/16/2008	0.00039 U	0.0218	0.0003 J	0.00042 J	0.00019 U	0.00673	0.000961	0.0103	0.00118	0.00019 U	0.00045 J
MW-02	1/22/2009	0.0008 U	0.014	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0039 J	0.0008 U	0.0007 U	0.0009 U
MW-02	7/22/2009	0.0025 J	0.032	0.0005 U	0.0006 U	0.0033 U	0.0042 J	0.0011 J	0.015	0.012	0.0005 U	0.0005 U
MW-02	1/22/2010	0.0009 U	0.0073	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0037 J	0.0006 U	0.0005 U	0.0005 U
MW-02	7/14/2010	0.0009 U	0.018	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.011	0.0006 U	0.0005 U	0.0005 U
MW-02	1/11/2011	0.0009 U	0.0078	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0049 J	0.0006 U	0.0005 U	0.0005 U
MW-02	7/13/2011	0.0021 J	0.026	0.0005 U	0.0005 U	0.0021 J	0.0038 J	0.0012 J	0.015	0.0037 J	0.0005 U	0.0005 U
MW-02	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-02	7/10/2012	0.0005 U	0.0088	0.0005 U	0.0005 U	0.0005 U	0.0043 J	0.0005 U	0.0043 J	0.0033 J	0.0005 U	0.0005 U
MW-02	1/9/2013	0.00318	0.0384	0.00057	0.00129	0.000874	0.0178	0.00147	0.0201	0.0211	0.00241	0.00087
MW-02	7/11/2013	0.000897	0.0179	0.000335 J	0.0013	0.000356 U	0.00734	0.00069	0.00986	0.00754	0.000776	0.00034 J
MW-02	1/8/2014	6.48E-05 U	0.000445 J	0.000101 J	0.00131	0.000343 U	0.000147 J	0.000307 J	0.00026 J	7.41E-05 U	0.000122 J	0.00018 J
MW-02	7/2/2014	0.000509	0.00452	0.0000979 J	0.000596	0.000349 U	0.00301	0.000368 J	0.00357	0.00653	0.000594	0.0002 J
MW-02	1/15/2015	0.000105 J	0.0026	0.0000892 J	0.000153 J	0.000426 J	0.000377 J	0.00007 U	0.00068	0.000472 J	0.000162 J	0.00011 U
MW-02	7/8/2015	0.00013	0.001	0.000015	0.000078	0.00013	0.00075	0.00001	0.00067	0.0013	0.00011	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-07	3/29/2000	0.0004 U	0.0002 J	0.0009 U	0.0006 J	0.0007 JB	0.0006 U	0.0004 U	0.0005 U	0.0001 J	0.00007 J	0.0003 U
MW-07	9/26/2000	0.0003 U	0.017	0.0002 J	0.0005 J	0.001 J	0.001 J	0.0008 J	0.0004 J	0.0003 J	0.0003 U	0.001 J
MW-07	4/25/2001	0.0003 U	0.0003 U	0.0002 U	0.001 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-07	9/27/2001	0.0003 U	0.006	0.0002 U	0.002 J	0.0006 J	0.0003 U	0.001 J	0.0003 U	0.0003 U	0.0004 J	0.0009 J
MW-07	3/11/2002	0.0003 U	0.0005 J	0.0002 U	0.0008 J	0.001 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-07	9/25/2002	0.00007 U	0.0009 J	0.00006 U	0.0007 J	0.0004 U	0.00008 J	0.0004 J	0.0001 J	0.0005 J	0.00009 U	0.0006 J
MW-07	3/16/2004	0.000067 U	0.000285 J	0.000076 U	0.000219 J	0.000172 U	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-07	3/1/2005	0.00007 U	0.0001 J	0.00006 U	0.0004 J	0.000791	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-07	7/19/2005	0.00007 U	0.0015	0.00006 U	0.000653	0.000352 U	0.00015 J	0.00017 J	0.00007 U	0.00006 U	0.00009 U	0.00026 J
MW-07	1/5/2006	0.00007 U	0.00286	0.00008 J	0.000537	0.000422 J	0.00009 J	0.00008 U	0.00038 J	0.00019 J	0.00009 U	0.00009 U
MW-07	7/28/2006	0.00008 U	0.00362	0.00008 U	0.000417	0.00009 U	0.00006 U	0.000275	0.00018 J	0.00007 U	0.00004 U	0.00053
MW-07	1/23/2007	0.00008 U	0.00004 U	0.00008 U	0.000353	0.00009 U	0.00006 U	0.00004 U	0.00004 U	0.000637	0.00004 U	0.00004 U
MW-07	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-07	1/28/2008	0.00038 U	0.00028 U	0.00028 U	0.000516	0.00019 U	0.00028 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00019 U
MW-07	7/16/2008	0.00039 U	0.00029 U	0.00044 J	0.000982	0.00019 U	0.00029 U	0.00019 U	0.00019 U	0.000675	0.00036 J	0.00019 U
MW-07	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-07	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	1/22/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	7/14/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0049 J	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	1/12/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	1/10/2013	0.000066 U	0.00181	0.00011 J	0.000833	0.000349 U	0.0000755 U	0.000066 U	0.00014 J	7.55E-05 U	0.0000566 U	0.0001 U
MW-07	7/11/2013	7.04E-05 U	0.0000804 U	0.0000603 U	0.000749	0.000372 U	0.0000804 U	0.0000704 U	7E-05 U	0.000111 J	0.0000603 U	0.00011 U
MW-07	1/9/2014	6.48E-05 U	0.0000741 U	0.0000556 U	4.63E-05 U	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-07	7/3/2014	0.000066 U	0.0000755 U	0.0000566 U	0.000696	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-07	1/15/2015	0.00007 U	0.00008	0.00006 U	0.000271 J	0.000944	0.00008 U	0.000189 J	7.9E-05 J	0.00008 U	0.00006 U	0.00014 J
MW-07	7/8/2015	0.000019	0.000027	0.000015	0.00014	0.00024	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-08	3/27/2000	0.0004 U	0.0007 U	0.0009 U	0.0003 J	0.0006 JB	0.0006 U	0.00005 J	0.0005 U	0.0002 J	0.0001 J	0.00004 J
MW-08	9/25/2000	0.0003 U	0.0003 U	0.0002 U	0.0004 U	0.001 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 J
MW-08	4/25/2001	0.0003 U	0.002	0.0002 U	0.0006 J	0.0005 U	0.001 J	0.0004 U	0.001 J	0.013	0.0003 U	0.0003 U
MW-08	9/27/2001	0.0003 U	0.0003 U	0.0002 U	0.0008 J	0.0007 J	0.0003 U	0.0005 J	0.0003 U	0.0003 U	0.0003 U	0.0004 J
MW-08	3/12/2002	0.0002 U	0.0003 J	0.0002 U	0.0005 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-08	9/25/2002	0.00007 U	0.00007 U	0.00006 U	0.0002 J	0.0004 U	0.00007 U	0.00009 U	0.00007 U	0.0001 U	0.00009 U	0.0002 J
MW-08	3/16/2004	0.000067 U	0.000074 U	0.000076 U	0.000124 U	0.000172 U	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-08	3/1/2005	0.00007 U	0.00012 J	0.00006 U	0.00015 J	0.00035 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-08	7/18/2005	0.00007 U	0.00007 U	0.00006 U	0.00026 J	0.000356 J	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00012 J
MW-08	1/6/2006	0.00007 U	0.00007 U	0.00006 U	0.00011 J	0.000363 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-08	7/28/2006	0.00008 U	0.00004 U	0.00008 U	0.00018 J	0.00012 J	0.00006 U	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-08	1/22/2007	0.00008 U	0.00004 U	0.00008 U	0.00004 U	0.00009 U	0.00006 U	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-08	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.00135 J	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-08	1/29/2008	0.00044 U	0.00033 U	0.00033 U	0.00031 J	0.00022 U	0.00033 U	0.00022 U	0.00022 U	0.00044 U	0.00022 U	0.00022 U
MW-08	7/16/2008	0.0004 U	0.0003 U	0.00044 J	0.000669	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.000654	0.00036 J	0.0002 U
MW-08	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-08	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	1/22/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	7/14/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	1/12/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	1/10/2013	0.000066 U	0.0000755 U	0.0000566 U	0.000439 J	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-08	7/11/2013	6.86E-05 U	0.0000784 U	0.0000588 U	0.000101 J	0.000363 U	0.0000784 U	0.0000686 U	6.9E-05 U	7.84E-05 U	0.0000588 U	0.00011 U
MW-08	1/9/2014	6.48E-05 U	0.0000741 U	0.0000556 U	0.000494	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000637 J	0.0001 U
MW-08	7/3/2014	0.000066 U	0.0000755 U	0.0000566 U	4.72E-05 U	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-08	1/15/2015	0.00007 U	0.00008	0.00006 U	0.000056 J	0.00037 U	0.00008 U	0.00007 U	0.00007 U	0.00008 U	0.00006 U	0.00011 U
MW-08	7/8/2015	0.000019	0.000027	0.000015	0.000014	0.00013	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-10A	3/28/2000	0.0002 J	0.0869	0 U	0.003	0.0006 JB	0.0019	0.008	0.0353	0.0929	0.0025	0.0053
MW-10A	9/25/2000	0.0003 U	0.004	0.0002 U	0.0004 J	0.001 J	0.0006 J	0.0004 U	0.0006 J	0.0005 J	0.0004 J	0.0003 J
MW-10A	4/27/2001	0.0003 U	0.003	0.0002 U	0.0006 J	0.0007 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-10A	9/28/2001	0.0003 U	0.0006 J	0.0002 U	0.0005 J	0.0005 U	0.0004 J	0.0004 U	0.0004 J	0.0003 U	0.0003 J	0.0003 U
MW-10A	3/12/2002	0.0003 U	0.001 J	0.0002 U	0.0005 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-10A	9/24/2002	0.00007 U	0.00007 U	0.00006 U	0.00009 U	0.0004 U	0.00007 U	0.00009 U	0.00007 U	0.0001 U	0.00009 U	0.00009 U
MW-10A	3/16/2004	0.000067 U	0.000074 U	0.000076 U	0.000124 U	0.000916	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-10A	3/1/2005	0.00007 U	0.00007 U	0.00006 U	0.00013 J	0.00035 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	7/19/2005	0.00007 U	0.00011 J	0.00006 U	0.00007 U	0.000352 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	1/5/2006	0.00007 U	0.00007 U	0.00006 U	0.00011 J	0.000359 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	7/28/2006	0.00008 U	0.000327	0.00008 U	0.00004 U	0.00009 U	0.00017 J	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-10A	1/23/2007	0.00008 U	0.000714	0.00008 U	0.000273	0.00009 U	0.00009 J	0.00004 U	0.00015 J	0.00007 U	0.00004 U	0.00004 U
MW-10A	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-10A	1/28/2008	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.0004 U	0.0002 U	0.0002 U
MW-10A	7/16/2008	0.00038 U	0.00029 U	0.00029 U	0.00019 U	0.0002 J	0.00029 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00019 U
MW-10A	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-10A	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	1/21/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	7/13/2010	0.0018 J	0.0018 J	0.001 J	0.0012 J	0.0033 U	0.0014 J	0.001 J	0.0012 J	0.0012 J	0.001 J	0.001 J
MW-10A	1/11/2011	0.0009 U	0.0017 J	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	7/13/2011	0.0005 U	0.0545 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	7/10/2012	0.0005 U	0.0016 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	1/9/2013	6.67E-05 U	0.0000762 U	0.0000571 U	0.000468 J	0.00171	0.0000762 U	0.0000667 U	6.7E-05 U	7.62E-05 U	0.0000571 U	0.00011 U
MW-10A	7/11/2013	0.00178	0.0306	0.000385 J	0.00036 J	0.000356 U	0.00866	0.000186 J	0.00631	0.199	0.00221	0.00011 U
MW-10A	1/8/2014	6.48E-05 U	0.0000741 U	0.0000556 U	4.63E-05 U	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-10A	7/15/2014	0.00262 J	0.0306	0.000566 U	0.000472 U	0.00349 U	0.00862	0.00066 U	0.0111	0.199	0.00442 J	0.00104 U
MW-10A	1/15/2015	0.00007 U	0.00272	0.000126 J	0.000191 J	0.00037 U	0.000349 J	0.00007 U	0.00069	0.000322 J	0.000126 J	0.00011 U
MW-10A	7/8/2015	0.000019	0.000027	0.000015	0.000069	0.000088	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-11A	3/28/2000	0.0021	0.232	0.00383	0.011	0.001 JB	**0.103**	0.016	0.179	0.0637	0.0694	0.0067
MW-11A	9/22/2000	0.001 J	0.31	0.003	0.01	0.0005 U	**0.12**	0.015	0.2	0.01	0.084	0.007
MW-11A	4/26/2001	0.014	0.28	0.004	0.014	0.0005 U	**0.14**	0.015	0.16	0.47	0.074	0.006
MW-11A	9/27/2001	**0.14**	0.31	0.004	0.008	0.0008 J	**0.13**	0.012	0.18	**2.4**	0.075	0.008
MW-11A	3/11/2002	0.027	0.4	0.005	0.013	0.0005 U	**0.19**	0.015	0.23	**0.68**	0.11	0.007
MW-11A	9/23/2002	0.073	0.27	0.003	0.009	0.0004 U	**0.099**	0.012	0.15	0.49	0.07	0.007
MW-11A	3/16/2004	0.00007 U	0.002777	0.00008 U	0.000321 J	0.001042	0.000463 J	0.000394 J	0.00035 J	0.002776	0.000081 U	8.8E-05 U
MW-11A	3/3/2005	0.00016 J	0.0139	0.00006 U	0.000833	0.000806	0.00451	0.000786	0.00663	0.011	0.00023 J	0.00016 J
MW-11A	7/19/2005	0.00019 J	0.0732	0.00074	0.00201	0.000352 U	0.00957	0.0064	0.0229	0.00482	0.00196	0.00308
MW-11A	1/5/2006	0.00007 U	0.00007 U	0.00006 U	0.00007 U	0.000363 U	0.00008 U	0.000516	0.00008 J	0.00006 U	0.00009 U	0.00011 J
MW-11A	7/28/2006	0.00008 U	0.0306	0.000263	0.000543	0.00014 J	0.000566	0.00362	0.00066	0.00012 J	0.00018 J	0.00186
MW-11A	1/23/2007	0.00008 U	0.00685	0.00008 U	0.000287	0.00009 U	0.0019	0.000292	0.00326	0.00481	0.000829	0.00016 J
MW-11A	7/17/2007	0.00133 U	0.0404	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.00297 J	0.00095 U	0.00124 U	0.0011 J	0.00148 J
MW-11A	1/28/2008	0.00038 U	0.0346	0.00029 U	0.000798	0.00028 J	0.00276	0.00338	0.0069	0.00038 U	0.00036 J	0.00191
MW-11A	7/16/2008	0.0004 U	0.02	0.0003 U	0.00054	0.0002 U	0.0003 U	0.00387	0.00089	0.0004 U	0.0002 U	0.00184
MW-11A	1/22/2009	0.0008 U	0.0076	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0012 J	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-11A	7/22/2009	0.0009 U	0.014	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0011 J	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	1/21/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	7/13/2010	0.0018 J	0.0056 UJ	0.001 J	0.0012 J	0.0033 U	0.0014 J	0.001 J	0.0012 J	0.0012 J	0.001 J	0.001 J
MW-11A	1/11/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	7/10/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	1/9/2013	0.000066 U	0.00175	0.0000566 U	0.000499	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-11A	7/11/2013	6.73E-05 U	0.000878	0.0000577 U	0.00044 J	0.000356 U	0.0000769 U	0.000221 J	6.7E-05 U	7.69E-05 U	0.0000577 U	0.00012 J
MW-11A	1/8/2014	6.48E-05 U	0.0000741 U	0.0001 J	0.00125	0.00046 J	0.0000741 U	0.0000795 J	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-11A	7/2/2014	0.000066 U	0.00427	0.000185 J	0.00126	0.00516	0.000618	0.00215	0.00149	0.000343 J	0.000384 J	0.00194
MW-11A	1/15/2015	0.00007 U	0.000471	0.00006 U	0.000399 J	0.00037 U	0.00008 U	0.00007 U	0.00007 U	0.00008 U	0.00006 U	0.00011 U
MW-11A	7/8/2015	0.000019	0.00025	0.000015	0.00017	0.00068	0.00012	0.00028	0.00011	0.00002	0.000021	0.00023

Notes:
PCL = Protective Concentration Level
J = Estimated value between the SDL and the MQL
U = Value not detected greater than the MQL
Bolded concentrations exceed PCL.

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
MW-10B	3/28/2000	0.0072	0.0003 J	0.002 J	0.0007 JB	0.0149	0.0006 JB	0.001 J	0.0142	0.0231	0.0002 J	0.0005 J
MW-10B	9/25/2000	0.32	0.004	0.014	0.0005 U	**0.2**	0.0009 J	0.01	0.19	**1.2**	0.0003 J	0.005
MW-10B	4/26/2001	0.087	0.002	0.004	0.0005 U	0.036	0.0004 U	0.003	0.047	0.18	0.002	0.001 J
MW-10B	9/28/2001	0.072	0.001 J	0.002	0.0005 U	0.029	0.0004 U	0.002 J	0.036	0.001 J	0.0002 U	0.001 J
MW-10B	3/13/2002	0.073	0.001 J	0.004	0.0006 J	0.032	0.0004 U	0.003	0.044	0.075	0.0002 U	0.002 J
MW-10B	9/24/2002	0.15	0.002	0.006	0.0004 J	0.076	0.001 J	0.005	0.086	0.33	0.00006 U	0.003
MW-10B	3/16/2004	0.04421	0.000833	0.002478	0.000982	0.0171	0.0003 J	0.001567	0.02079	0.001853	9.53E-05 U	0.000718
MW-10B	3/1/2005	0.0164	0.00035 J	0.000995	0.00035 U	0.00482	0.00022 J	0.000941	0.00601	0.00171	0.00004 U	0.00041 J
MW-10B	7/19/2005	0.0739	0.000953	0.00413	0.000352 U	0.0286	0.00065	0.00288	0.0377	0.0789	0.00004 U	0.00125
MW-10B	1/5/2006	0.0113	0.000711	0.000556	0.000356 U	0.0002 J	0.00011 U	0.000649	0.00007 U	0.00006 U	0.00004 U	0.00038 J
MW-10B	7/28/2006	0.0802	0.00107	0.00491	0.00022	0.0323	0.0002	0.00273	0.0434	0.0904	0.00007 U	0.00128
MW-10B	1/23/2007	0.0279	0.00103	0.00126	0.00016 J	0.00312	0.0001 U	0.000745	0.00344	0.000242	0.00007 U	0.000283
MW-10B	7/17/2007	0.0961	0.00114 U	0.00437 J	0.0019 U	0.0325	0.00362 U	0.0028 J	0.0399	0.0252	0.00267 U	0.000952 U
MW-10B	1/28/2008	0.0743	0.00122	0.00432	0.00019 U	0.0255	0.00019 U	0.00371	0.0374	0.0185	0.00019 U	0.00146
MW-10B	7/16/2008	0.0975	0.00113	0.00484	0.0002 J	0.0392	0.0002 U	0.00397	0.0457	0.014	0.0002 U	0.00174
MW-10B	1/22/2009	0.096	0.0007 U	0.0043 J	0.0012 U	0.035	0.0007 U	0.0039 J	0.051	0.0028 J	0.0015 U	0.002 J
MW-10B	7/22/2009	0.067	0.0005 U	0.0029 J	0.0033 U	0.023	0.0005 U	0.0022 J	0.033	0.0082	0.0005 U	0.0013 J
MW-10B	1/21/2010	0.052	0.0005 U	0.0025 J	0.0033 U	0.018	0.0005 U	0.0017 J	0.031	0.0037 J	0.0005 U	0.0005 U
MW-10B	7/13/2010	0.138	0.001 J	0.0076 UJ	0.0033 U	0.05	0.001 J	0.0052 UJ	0.082	0.112	0.001 J	0.002 UJ
MW-10B	1/11/2011	0.096	0.0005 U	0.0068	0.0033 U	0.037	0.0005 U	0.0054	0.059	0.075	0.0005 U	0.0023 J
MW-10B	7/13/2011		0.0005 U	0.0033 J	0.0013 J	0.019	0.0005 U	0.0023 J	0.032	0.0018 J	0.0005 U	0.0011 J
MW-10B	1/30/2012	0.1	0.0011 J	0.0057	0.0005 U	0.038	0.0005 U	0.0046 J	0.06	0.084	0.0005 U	0.002 J
MW-10B	7/10/2012	0.054	0.0005 U	0.0032 J	0.0005 U	0.02	0.0005 U	0.0028 J	0.031	0.004 J	0.0005 U	0.0011 J
MW-10B	1/9/2013	0.12	0.00108	0.00546	0.000349 U	0.0401	0.0001 U	0.00427	0.0652	0.00399	3.77E-05 U	0.00146
MW-10B	7/11/2013	0.977	0.00986	0.0391	0.0037 U	**0.302**	0.011 U	0.0274	0.468	0.207	0.0004 U	0.0101
MW-10B	1/8/2014	0.021	0.000536	0.00107	0.000408 J	0.00493	0.00028 J	0.000117 J	0.00429	0.0646	0.000037 U	0.000102 U
MW-10B	7/15/2014	0.0777	0.000566 U	0.00352 J	0.00349 U	0.0258	0.00104 U	0.00211 J	0.0424	0.125	0.000377 U	0.00104 U
MW-10B	1/15/2015	0.166	0.00104	0.00702	0.00037 U	0.0727	0.00011 J	0.00711	0.0975	**0.556**	0.00004 U	0.00234
MW-10B	1/29/2015	0.0507	0.000597	0.00179	0.000366 U	0.0129	0.00011 U	0.00117	0.0202	0.0247	0.00004 U	0.000392
MW-10B	7/8/2015	0.084	0.00048	0.003	0.00014	0.032	7.8E-05	0.0023	0.047	0.077	0.000035 U	0.00095
MW-11B	3/29/2000	0.043	0.002	0.002 J	0.0006 JB	0.016	0.0008 JB	0.003	0.014	0.079	0.0007 U	0.001 J
MW-11B	9/22/2000	0.3	0.003	0.013	0.0005 U	**0.18**	0.001 J	0.011	0.16	**1.5**	0.0002 U	0.005
MW-11B	4/25/2001	0.2	0.003	0.011	0.0005 U	**0.1**	0.0004 U	0.011	0.11	0.47	0.0002 U	0.005
MW-11B	9/27/2001	0.14	0.003	0.005	0.0005 U	0.068	0.0004 U	0.004	0.072	**0.5**	0.0002 U	0.003
MW-11B	3/14/2002	0.15	0.004	0.007	0.0005 U	0.078	0.0005 J	0.007	0.087	0.22	0.0002 U	0.003
MW-11B	9/24/2002	0.21	0.003	0.009	0.0004 U	**0.12**	0.0008 J	0.008	0.12	**0.7**	0.00006 U	0.004
MW-11B	3/16/2004	0.0486	0.001163	0.000854	0.00018 U	0.01581	0.00035 J	0.001971	0.0112	0.01168	0.0001 U	0.000991
MW-11B	3/1/2005	0.0131	0.00031 J	0.00025 J	0.00037 U	0.00027 J	0.0003 J	0.000589	0.0001 J	0.00006 U	0.00004 U	0.00025 J
MW-11B	7/19/2005	0.0577	0.000799	0.0024	0.000352 U	0.0289	0.00036 J	0.00159	0.0261	0.186	0.00004 U	0.000745
MW-11B	1/5/2006	0.0537	0.000617	0.00269	0.000352 U	0.0261	0.00013 J	0.00189	0.0259	0.0025	0.00004 U	0.000873
MW-11B	7/31/2006	0.0707	0.00119	0.00345	0.00026	0.0359	0.00042	0.00245	0.0336	0.1	0.00007 U	0.00122
MW-11B	1/23/2007	0.0125	0.000315	0.000523	0.00009 U	0.00295	0.0001 U	0.000549	0.00231	0.00013 J	0.00007 U	0.000319
MW-11B	7/17/2007	0.088	0.00114 U	0.00396 J	0.0019 U	0.0411	0.00362 U	0.0029 J	0.0353	0.0901	0.00267 U	0.00146 J
MW-11B	1/28/2008	0.0649	0.00028 U	0.00236	0.00021 J	0.0273	0.00019 U	0.00175	0.0297	0.0354	0.00019 U	0.000848
MW-11B	7/16/2008	0.12	0.00126	0.00472	0.00021 U	0.0649	0.00021 U	0.00383	0.0578	0.0772	0.00021 U	0.00163

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
MW-11B	1/22/2009	0.072	0.0007 U	0.0022 J	0.0012 U	0.031	0.0007 U	0.0018 J	0.032	0.0008 U	0.0015 U	0.0009 U
MW-11B	7/22/2009	0.12	0.0015 J	0.0043 J	0.0033 U	0.054	0.0005 U	0.0036 J	0.053	0.048	0.0005 U	0.002 J
MW-11B	1/21/2010	0.048	0.0013 J	0.0011 J	0.0033 U	0.012	0.0005 U	0.0014 J	0.013	0.0006 U	0.0005 U	0.0005 U
MW-11B	7/13/2010	0.22	0.001 J	0.011	0.0033 U	0.096	0.001 J	0.0092 UJ	0.112	0.0136	0.001 J	0.0044 UJ
MW-11B	1/11/2011	0.039	0.0012 J	0.0006 U	0.0033 U	0.006	0.0005 U	0.0015 J	0.0038 J	0.0006 U	0.0005 U	0.0005 U
MW-11B	7/12/2011	0.084	0.0012 J	0.0054	0.0005 U	0.038	0.0005 U	0.0046 J	0.046	0.06	0.0005 U	0.0024 J
MW-11B	1/30/2012	0.025	0.0011 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0013 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11B	7/10/2012	0.1	0.0013 J	0.0055	0.0005 U	0.04	0.0005 U	0.0053	0.054	0.004 J	0.0005 U	0.0024 J
MW-11B	1/9/2013	0.0631	0.00136	0.000168 J	0.00195	0.00352	0.0001 U	0.00307	0.00205	0.0000755 U	3.77E-05 U	0.00154
MW-11B	7/11/2013	0.108	0.00119	0.00321	0.000356 U	0.0231	0.00011 U	0.00383	0.0388	0.00535	3.85E-05 U	0.00196
MW-11B	1/8/2014	0.0603	0.00102	0.00242	0.000493 J	0.0111	0.00032 J	0.00267	0.0195	0.000382 J	0.000037 U	0.00126
MW-11B	7/2/2014	0.0953	0.00166	0.00375	0.000349 U	0.0199	0.00011 J	0.00417	0.0339	0.0135	3.77E-05 U	0.00213
MW-11B	1/15/2015	0.0472	0.00113	0.000945	0.00037 U	0.00472	0.00011 U	0.00201	0.00867	0.00008 U	0.00004 U	0.000935
MW-11B	7/8/2015	0.057	0.00065	0.0025	0.00019 U	0.014	4.4E-05 U	0.0034	0.025	0.0021 U	0.000035 U	0.0017
P-10	3/28/2000	0.51	0.00176	0.022	0.0008 JB	**0.16**	0.0006 JB	0.014	0.28	**4.32**	0 U	0.006
P-10	9/26/2000	0.39	0.0002 U	0.024	0.0005 U	**0.16**	0.0007 J	0.017	0.23	**4.4**	0.0002 U	0.008
P-10	4/25/2001	0.32	0.0002 U	0.021	0.0005 U	**0.11**	0.0004 U	0.015	0.19	**3.8**	0.0002 U	0.006
P-10	9/27/2001	0.3	0.0002 U	0.013	0.0005 J	**0.13**	0.0004 U	0.01	0.17	**3.2**	0.0002 U	0.006
P-10	3/13/2002	0.36	0.002	0.012	0.001 J	**0.14**	0.0004 U	0.008	0.17	**2.3**	0.0002 U	0.003
P-10	9/25/2002	0.042	0.0004 J	0.001 J	0.0009 J	0.011	0.003	0.001 J	0.013	0.2	0.00006 U	0.0005 J
P-10	3/16/2004	0.000074 U	0.000076 U	0.000124 U	0.000172 U	0.000076 U	0.00038 J	0.000093 U	0.000068 U	0.000067 U	9.53E-05 U	0.000084 U
P-10	3/3/2005	0.00453	0.00008 J	0.00015 J	0.000836	0.000892	0.00028 J	0.00015 J	0.000723	0.0142	0.00004 U	0.00009 U
P-10	7/19/2005	0.0737	0.000476	0.00346	0.000352 U	0.0314	0.00048	0.0024	0.0364	0.464	0.00004 U	0.00102
P-10	1/5/2006	0.102	0.00006 U	0.0057	0.000359 U	0.0325	0.00011 U	0.00273	0.048	0.433	0.00004 U	0.00108
P-10	7/31/2006	0.0346	0.00016 J	0.000981	0.00016 J	0.00945	0.00032	0.000924	0.0115	0.062	0.00007 U	0.00046
P-10	1/23/2007	0.0165	0.00008 U	0.000437	0.00009 U	0.0044	0.0001 U	0.00004 U	0.00541	0.0204	0.00007 U	0.000215
P-10	7/17/2007	0.0688	0.00114 U	0.00319 J	0.0019 U	0.0272	0.00362 U	0.0021 J	0.0291	0.297	0.00267 U	0.001 J
P-10	1/28/2008	0.00373	0.00028 U	0.000703	0.00023 J	0.000713	0.00019 U	0.000506	0.000668	0.00038 U	0.00019 U	0.00039 J
P-10	7/16/2008	0.0106	0.00053	0.000747	0.00022 J	0.00176	0.00092 J	0.00022 J	0.00245	0.00079	0.00021 U	0.00021 U
P-10	1/22/2009	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0015 U	0.0009 U
P-10	7/22/2009	0.0044 J	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	1/22/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	7/14/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	1/12/2011	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	1/10/2013	0.0000755 U	0.0000566 U	4.72E-05 U	0.000906	7.55E-05 U	0.0001 U	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.000104 U
P-10	7/11/2013	0.0000808 U	0.0000606 U	0.000133 J	0.000492 J	8.08E-05 U	0.00011 U	0.0000707 U	0.0000707 U	0.0000808 U	4.04E-05 U	0.000111 U
P-10	1/9/2014	0.000102 J	0.0000556 U	0.000323 J	0.000343 U	7.41E-05 U	0.00026 J	0.0000648 U	0.0000648 U	0.0000741 U	0.000037 U	0.000102 U
P-10	7/2/2014	0.01	0.0000588 U	0.000375 J	0.00127	0.00205	0.00011 U	0.00042 J	0.00393	0.0000784 U	3.92E-05 U	0.000318 J
P-10	1/15/2015	0.00008 U	0.00006 U	0.000122 J	0.000853	0.00008 U	0.00011 U	0.000114 J	0.00007 U	0.00008 U	0.00004 U	0.00011 U
P-10	7/8/2015	0.023	0.00012	0.00039	0.0006	0.0024	4.4E-05	0.0006	0.0046	0.019	0.000035 U	0.00038

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
P-12	3/28/2000	0 U	0 U	0 U	0.001 JB	0 U	0.0008 JB	0 U	0 U	0.0001 J	0.0001 J	0.01
P-12	9/25/2000	0.0003 U	0.0002 U	0.0004 U	0.001 J	0.0003 U	0.0006 J	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.013
P-12	4/24/2001	0.0003 U	0.0002 U	0.0004 U	0.0005 U	0.0003 U	0.0004 U	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.009
P-12	9/27/2001	0.0003 U	0.0002 U	0.0004 U	0.0007 J	0.0003 U	0.0006 J	0.0004 U	0.0003 U	0.0005 J	0.0002 U	0.01
P-12	3/14/2002	0.0003 U	0.0002 U	0.0004 U	0.0005 U	0.0003 U	0.0004 U	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.0003 U
P-12	9/25/2002	0.00007 U	0.00006 U	0.00009 U	0.0004 U	0.00007 U	0.001 J	0.00009 U	0.00007 U	0.0001 U	0.00006 U	0.006
P-12	3/17/2004	0.000074 U	0.000076 U	0.000124 U	0.001748	0.000076 U	0.00092	0.000093 U	0.000068 U	0.000067 U	9.53E-05 U	0.007348
P-12	3/3/2005	0.00007 U	0.00006 U	0.00007 U	0.00035 U	0.00008 U	0.00013 J	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00592
P-12	7/18/2005	0.00007 U	0.00006 U	0.00007 U	0.000431 J	0.00008 U	0.00053	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00767
P-12	1/6/2006	0.00007 U	0.00006 U	0.00007 U	0.000352 U	0.00008 U	0.00011 U	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00615
P-12	7/28/2006	0.00004 U	0.00008 U	0.00004 U	0.00011 J	0.00006 U	0.00017 J	0.00004 U	0.00004 U	0.00007 U	0.00007 U	0.00545
P-12	1/22/2007	0.00004 U	0.00008 U	0.00004 U	0.00009 U	0.00006 U	0.0001 U	0.00004 U	0.00004 U	0.00007 U	0.00007 U	0.00312
P-12	7/17/2007	0.00114 U	0.00114 U	0.000952 U	0.0019 U	0.0041 U	0.00362 U	0.000952 U	0.000952 U	0.00124 U	0.00267 U	0.0075 J
P-12	1/29/2008	0.00029 U	0.00029 U	0.000645	0.00019 U	0.00029 U	0.00019 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00932
P-12	7/16/2008	0.0003 U	0.0003 U	0.000552	0.00034 J	0.0003 U	0.00085 J	0.0002 U	0.0002 U	0.000626	0.0002 U	0.00211
P-12	1/22/2009	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0015 U	0.0026 J
P-12	7/22/2009	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	1/22/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	7/14/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	1/12/2011	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	1/9/2013	0.0000755 U	0.0000566 U	4.72E-05 U	0.00142	7.55E-05 U	0.0001 U	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.000104 U
P-12	7/11/2013	0.00008 U	0.00006 U	0.00005 U	0.00039 J	0.00008 U	0.00011 U	0.00007 U	0.00007 U	0.00008 U	0.00004 U	0.00011 U
P-12	1/9/2014	0.0000741 U	0.0000556 U	0.0002 J	0.000515 J	7.41E-05 U	0.00042 J	0.0000648 U	0.0000648 U	0.0000741 U	0.000037 U	0.000102 U
P-12	1/15/2015	0.00008 U	0.00006 U	0.00005 J	0.00037 J	0.00008 U	0.00011 J	0.00007 U	0.00007 U	0.00008 U	0.00004 U	0.00152
P-12	7/2/2014	0.0000755 U	0.0000566 U	0.000189 J	0.000439 J	7.55E-05 U	0.00014 J	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.00189
P-12	7/8/2015	0.000027 U	0.000015 U	0.000014 U	0.00055 J	0.00002 U	0.00002 U	0.00001 U	0.00003 U	0.00002 U	0.000035 U	0.000019 U

Notes:

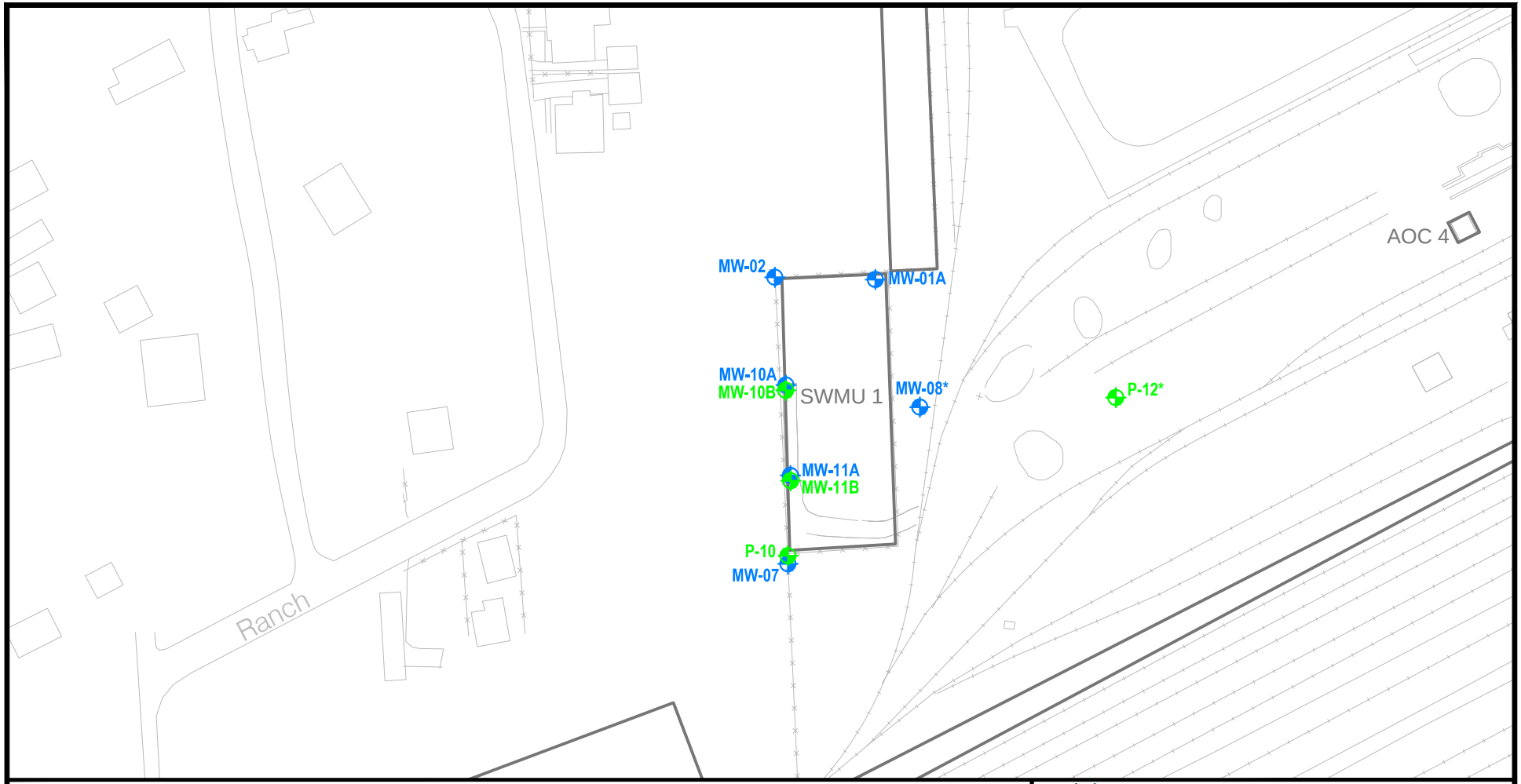
PCL = Protective Concentration Level

J = Estimated value between the SDL and the MQL

U = Value not detected greater than the MQL

Bolded concentrations exceed PCL.

FIGURES



EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-TZ Monitoring Well Location

Note:
* Background well.

N

Approx. Scale in Feet

0 60 120

Source:
Base map from ERM-Southwest, Inc 0014419a310.dwg, 6/19/2006.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure VII.A

SITE MAP
SWMU No. 1

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Figure VII.B
2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

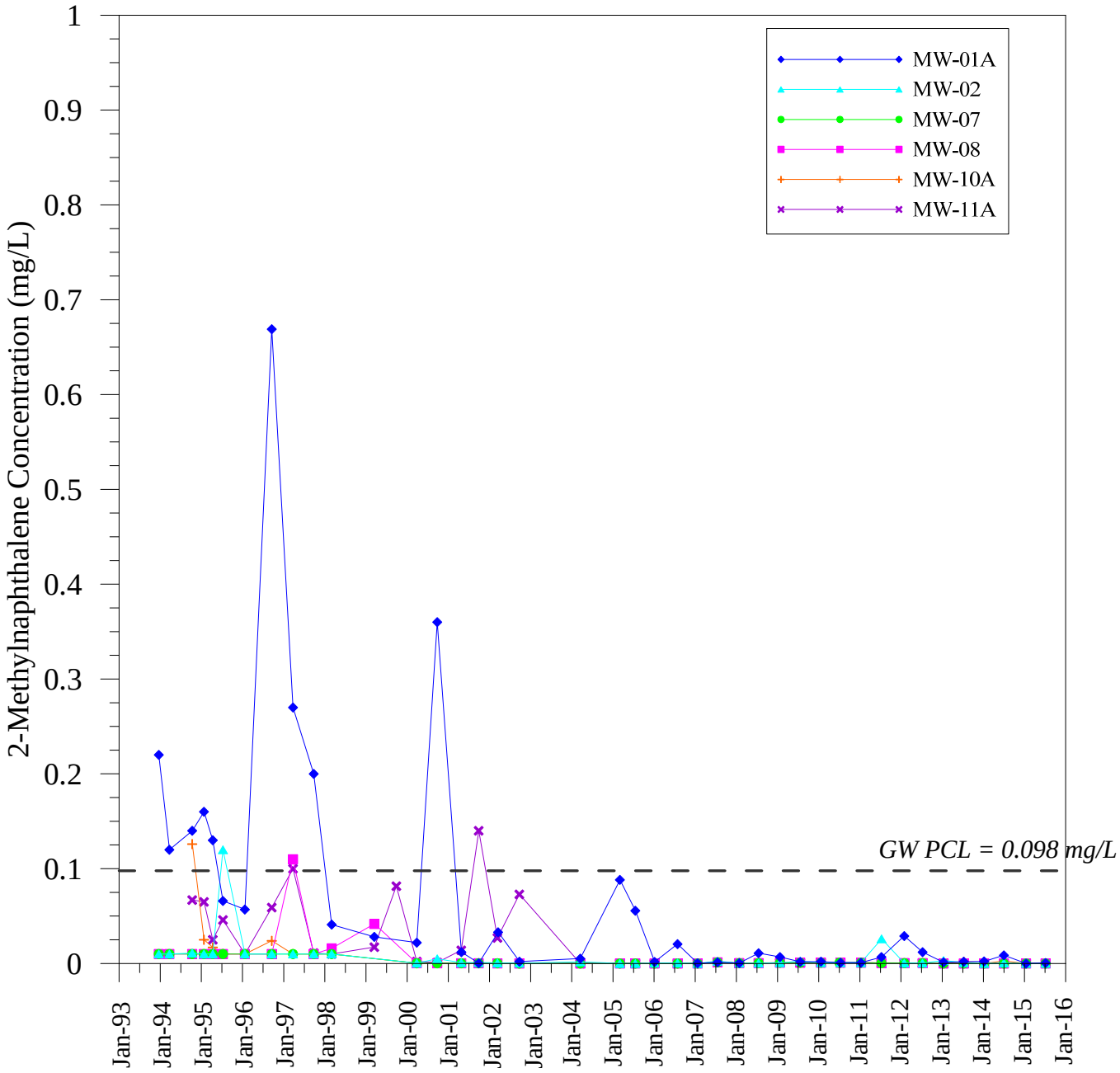


Figure VII.C
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

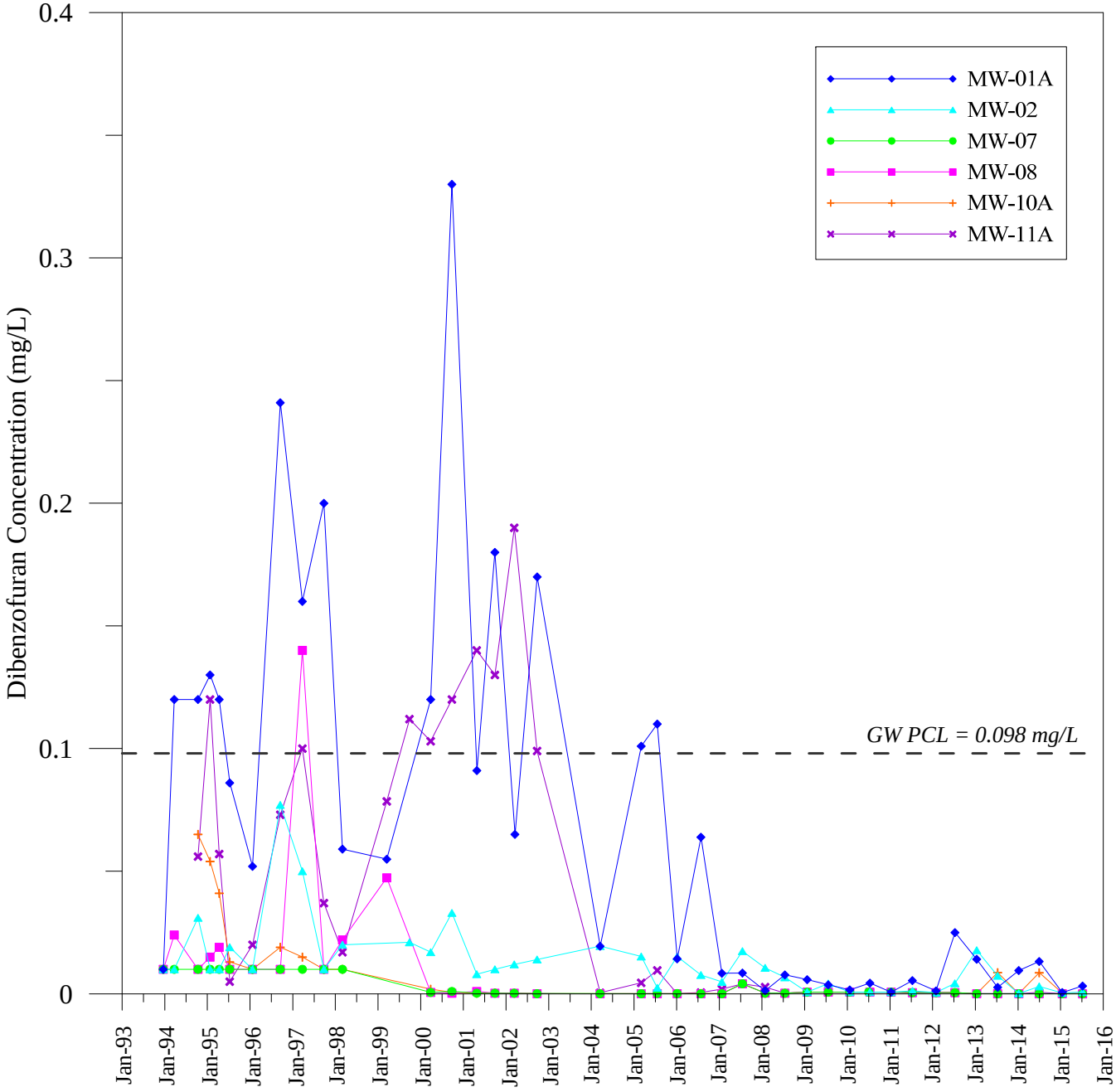


Figure VII.D
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

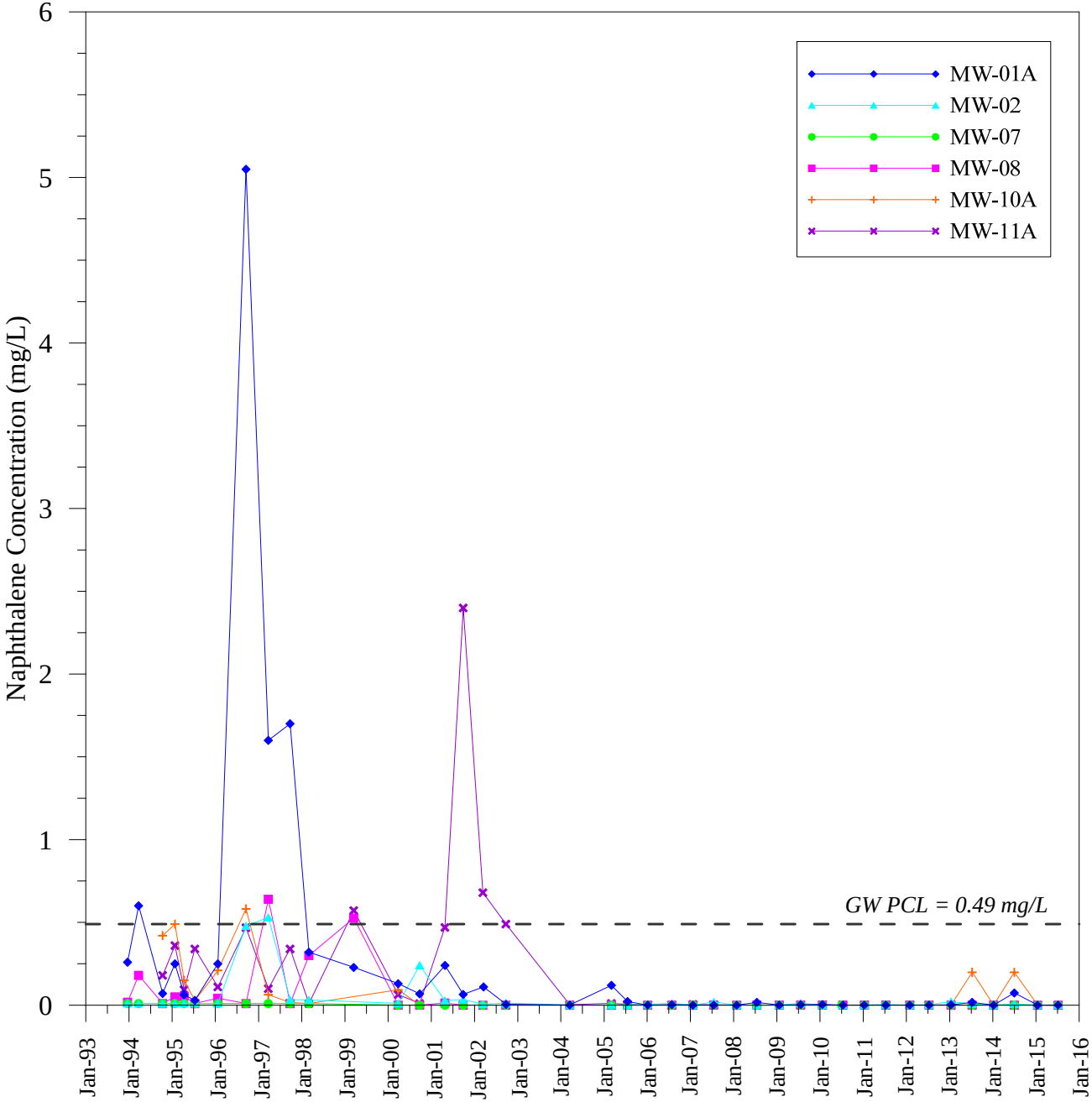
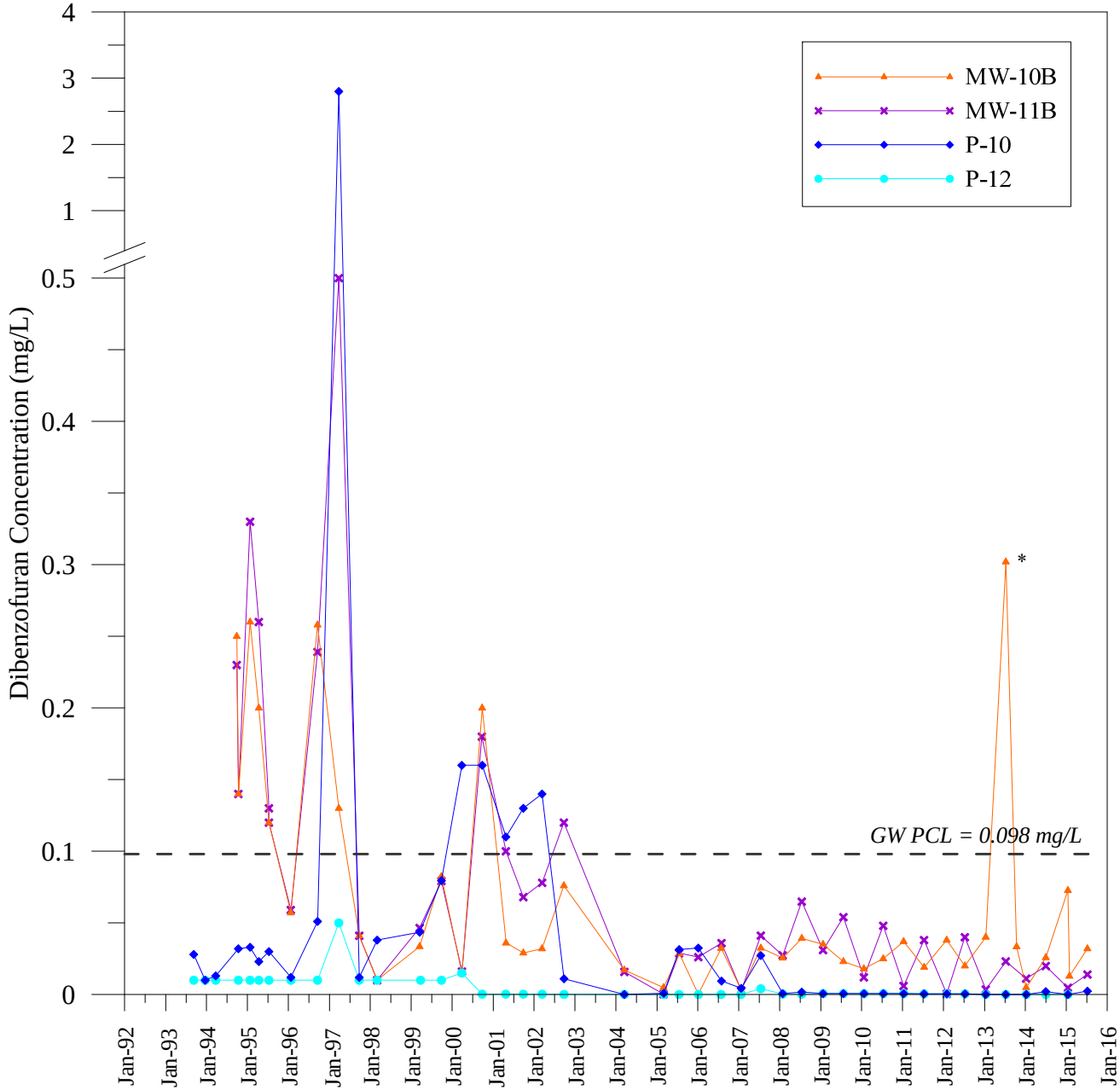
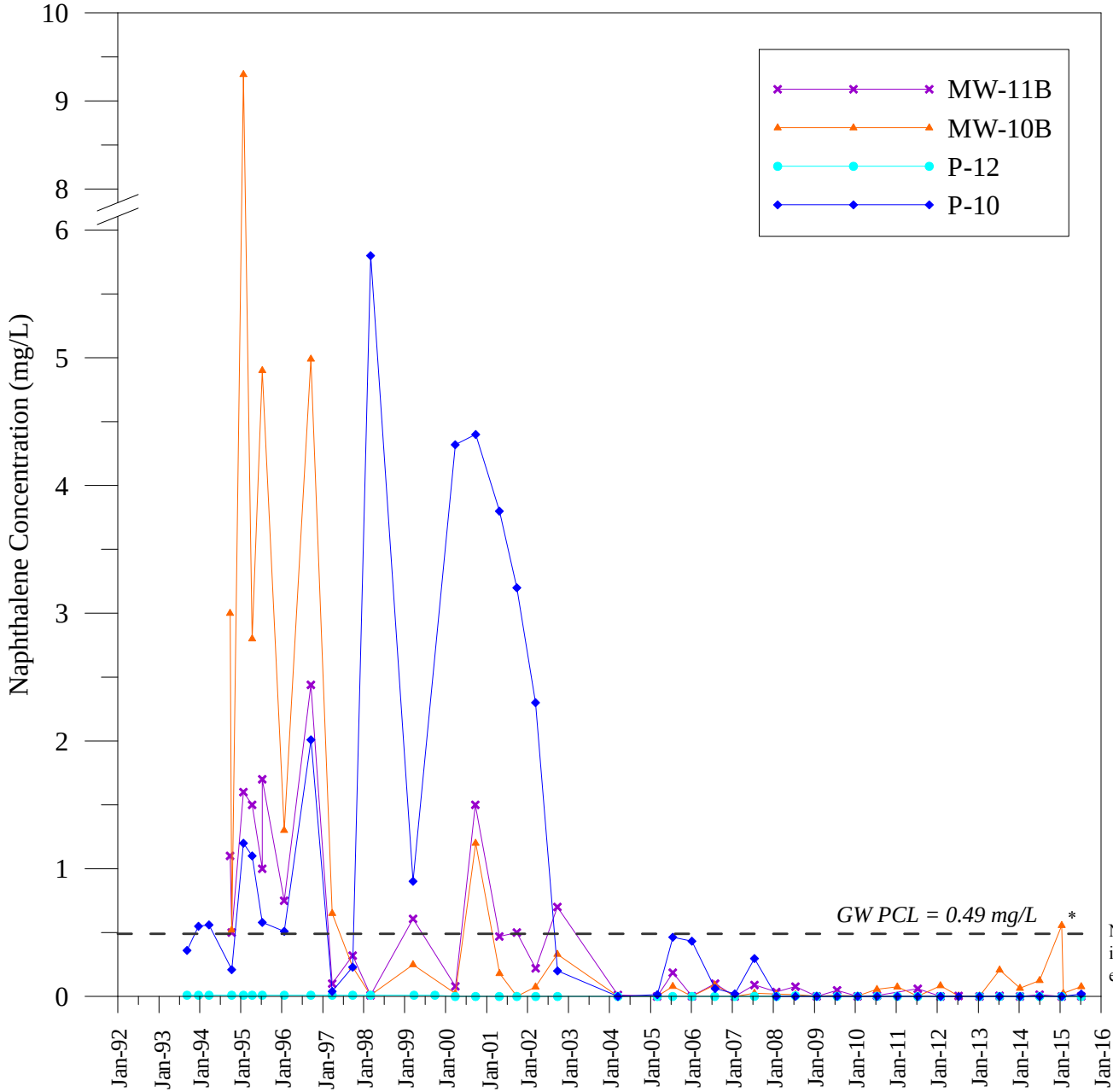


Figure VII.E
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



Note: * Resample of dibenzofuran at MW-10B in July 2013 did not verify the initial PCL exceedance.

Figure VII.F
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



Note: * Resample of napthalene at MW-10B in January 2015 did not verify the initial PCL exceedance.

PART B PERMIT RENEWAL

SECTION IX – REPLACEMENT PAGES

IX. RELEASES FROM SOLID WASTE UNITS AND CORRECTIVE ACTION

IX.A.1 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 001/SWMU 1

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 001/SWMU No. 1

B. Description: Landfill, D80

C. Dates of Operation: 1979-1982

II. Wastes Managed: Creosote-contaminated soil, sawdust, and tank bottoms.

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: Soil, groundwater

V. Summary: Solid Waste Management Unit (SWMU) 1 is an inactive surface impoundment (SI) and is a grass-covered section of land located at the southwest comer of the facility property. The SI is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SI. A chain-link security fence is located along the northern and western margins of the SI. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, the SI would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of the SI. No information was available concerning the thickness and engineering properties of the liner. According to SPTCo representatives, the SI was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of the SI was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

In 1984, SPTCo closed the SI by excavating the soils and materials contained within. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. The area was then divided into 50-foot grids which were randomly selected for sampling. Between 10 and 15 grab samples not more than 6-inches deep were homogenized and analyzed for K001 listed waste parameters and polynuclear aromatic hydrocarbons (PAHs). When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed (Rollins, 1984).

In 1991, a series of six soil borings were drilled within the same six grid areas that were sampled during the 1984 closure operations (Geo Associates, 1991). Four samples were collected from each of the borings from the following zones: the surficial clay fill, between the clay fill and the uppermost sand, the uppermost sand, and below the uppermost sand unit. These samples were analyzed for BTEX, TPH and semi-volatiles.

Bis (2-ethylhexyl) phthalate was detected in two samples at concentrations well below the TCEQ Texas Risk Reduction Program (TRRP) Protective Concentration Limits (PCL). Xylene, ethylbenzene and toluene were also detected, but at concentrations well below the PCL. The 1991 soil sampling results indicated that the source of contamination had been removed by the 1984 closure activities (SPTCo, 1991).

In 1984, the facility then began investigating and monitoring the shallow ground water in the vicinity of the SI. Between 1984 and 1991, nine groundwater monitoring wells were installed in the upper zone, and three piezometers were installed in the lower permeable zone. Hydrogeological data collected from these wells and piezometers indicate hydraulic conductivity between the zones. Analytical data compiled from 1984 until 1991 indicated that benzene, toluene, naphthalene, 2,4-dimethylphenol, and phenol were the most frequently detected parameters and that naphthalene was the parameter detected at the highest concentrations.

The facility entered into post-closure care in 1994, updated in 2005, and groundwater monitoring has taken place on a semi-annual basis since that time. Analytical results are compared to the TRRP PCLs. Since 2006, constituent concentrations have been below their respective PCLs.

VI. Recommended Action: No further action recommended. The surface impoundment was closed in 1984 with all waste and contaminated soils removed, is in post-closure care and has been regulated under a post-closure care permit. Additionally, concentrations in groundwater have been below PCLs for sixteen consecutive semi-annual monitoring events (8 years). Therefore, it is recommended to cease all post-closure care activities including inspection and groundwater monitoring. Upon TCEQ approval, the existing monitoring wells for SWMU No. 1 will be plugged and abandoned.

IX.A.3 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 003

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 003

B. Description: Tank (sub-surface), S02

C. Dates of Operation: Unknown

II. Wastes Managed: Unknown

III. Evidence of Release: See NOR 002/SWMU 7

IV. Pollutant Dispersal Pathways: Soil

V. Summary: No information regarding the sub-surface tank is available. The tank was reported to be the vicinity of SWMU 7.

VI. Recommended Action: No further action recommended. The unit is addressed in the facility-wide corrective action detailed in the Compliance Plan.

IX.A.4 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 004

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 004

B. Description: Container storage area, S01

C. Dates of Operation: 1995-Present

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
00029032	Non-haz	General refuse from office & site operations
04003011	Non-haz	Petroleum contaminated solids generated as part of corrective action work performed on-site.
14773012	Non-haz	Petroleum contaminated soils generated as part of site investigation and corrective action
14781011	Non-haz	Petroleum contaminated purge water generated as part of groundwater monitoring and investigation
14791012	Non-haz	Petroleum-affected purge water generated as part of groundwater monitoring and investigation
14804062	Non-haz	Plastic and used personal protective equipment generated as a result of monitoring well and/or soil sampling
14841012	Non-haz	Petroleum contaminated purge water generated as part of groundwater monitoring and investigation
0001301H	F034, K001	Soil generated primarily by the boring of monitor wells around the closed wood preserving operation surface impoundment.
0909101H	K001, F034	Aqueous Waste with low surfactants. Groundwater generated from drilling activities for investigative purposes.
0912489H	F034, K001	Creosote sludge, soil mixture generated as part of corrective action performed on-site.
0914101H	F034, K001	Groundwater generated from purging of various monitor wells for investigative purposes.
0915301H	F034, K001	Soil derived from the boring of monitor wells for investigative purposes.
09163081	Non-haz	Empty drums previously used to contain monitor well purge water
0917406H	K001	Plastic and used personal protective equipment generated as a result of monitor well and/or soil sampling.
09133192	Non-haz	Contaminated clothing & personal protective equipment generated from corrective action work performed on-site
0918219H	F034, K001, U051	Recovered creosote NAPL from groundwater monitoring wells

TCEQ Waste Code	EPA Waste Code	Waste Description
1481514H	D002	Drilling mud from boring monitor wells for investigative purposes
1482110H	D002	Purge water generated as part of groundwater monitoring and investigation
14835142	Non-haz	Drilling mud from boring monitor wells for investigative purposes

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: Soil

V. Summary: The container storage area is an approximately 25 by 18 foot concrete pad surrounded by chain-link fencing and is used as a temporary drum storage.

VI. Recommended Action: No further action recommended. No evidence of a release has been identified at the unit. However, the unit is within the larger SWMU 5 – Original Process Area where evidence of historical releases have occurred.

IX.A.5 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 005

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 005

B. Description: Waste Pile, S03

C. Dates of Operation: 1907-2010

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
09024882	Non-haz	Waste rail ties generated from operation & maintenance of the railroad & are generated intermittently
09103072	Non-haz	Ferrous scrap metal generated from operation & maintenance of the railroad & is generated on an intermittent basis
09113072	Non-haz	Non-Ferrous scrap metal generated from operation & maintenance of the railroad & is generated on an intermittent basis

III. Evidence of Release: No evidence of a release.

IV. Pollutant Dispersal Pathways: Soil

V. Summary: Ferrous and non-ferrous scrap metal and waste rail ties generated from operation and maintenance of the railroad was generated on an intermittent basis. The location of NOR 005 is in the vicinity of SWMU 12. UPRR will no longer store these wastes at this unit.

VI. Recommended Action: No further action. This unit has not managed hazardous wastes or wastes containing hazardous substances and no evidence of a release was reported.

IX.A.6 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 006

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 006

B. Description: Miscellaneous Storage Containers, S99 (location unknown)

C. Dates of Operation: 1995-2006 (approximate)

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
2012061	Non-haz	Waste oil generated from 4 fork lifts operating on-site

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: Soil

V. Summary: Waste oil generated at this unit was derived from fork lifts on the property which, at maintenance intervals, had oil pumped directly out of their crankcases by a commercial recycler. In a letter to the Texas Natural Resource Conservation Commission dated August 8, 1995, Edward Hurst, the Director of Environmental Compliance for Southern Pacific Lines explained that the commercial recycler pumped the oil directly into a recycling truck and it was immediately removed from the property. None of these activities ar performed at the Site and this waste code will be removed from the NOR.

VI. Recommended Action: No further action. This unit has not managed hazardous wastes or wastes containing hazardous substances and no evidence of a release was reported.

IX.A.12 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 8

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 8

B. Description: Aboveground Storage Tank Area, S02

C. Dates of Operation: Unknown

II. Wastes Managed: Tank bottoms (K001), creosote, extender mix and naphtha

III. Evidence of Release: A naphtha spill and a working tank explosion were documented

IV. Pollutant Dispersal Pathways: Soil

V. Summary: The AST area was formerly located east of the recent process area (SWMU 4) in the northeast comer of the facility. The area housed 14 ASTs and a below-grade product drop tank used to store creosote and extenders. In addition, a series of aboveground pipes and manifolds was used to transfer product and wastes between tanks and the process area retort cylinders. A 1981 site diagram of the wood-preserving works indicated that six of the tanks were classified as working tanks containing creosote and extenders pumped to and from the retort cylinders. The tanks, which were about 20 feet in diameter, were located next to the wood-treatment building. Three tanks classified as storage tanks were located along the south side of the recent process area. These tanks, which were about 30 feet in diameter, were used to store creosote pumped into the working tanks.

An AST, about 30 feet in diameter, and four naphtha storage tanks, about 10 feet in diameter, were located north of the working tanks. The naphtha tanks were used in the process of removing sap and moisture from untreated ties.

The product drop tank was a concrete tank, about 35 by 20 feet, located at the northeast corner of the AST area. SPTCo representatives stated that the tank was constructed of concrete and was about 12 feet deep. SPTCo representatives stated that the product drop tank was used for the off-loading of creosote and extenders from the railway prior to storage in the ASTs. The cooling tower was also located in the AST area.

Secondary containment consisted of a concrete retaining wall about 4 feet high by 1 foot wide. The facility

installed the wall to prevent surface water runoff into the storm sewers. Three circular concrete foundations were observed in the vicinity of the three creosote storage tanks. Remnants of the concrete retaining wall were also observed at the southeast and southwest comers of the AST area. The ASTs have been removed from the area and the area has been re-graded with gravel. Piping and commercially treated wood ties were observed being stored in the area.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

IX.A.14 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 10

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 10

B. Description: Location of Former Sap Water Treatment Tank, T01

C. Dates of Operation: Unknown

II. Wastes Managed: Wastewater containing naphtha, creosote residue and extender

III. Evidence of Release: No evidence of a release was discovered.

IV. Pollutant Dispersal Pathways: Soil

V. Summary: The sap water treatment tank was formerly located next to the AST area (SWMU 8) in the northeast corner of the facility property. SPTCo representatives had no information regarding the construction or capacity of the tank. A 1981 site diagram of the wood-treatment facility indicated that the tank was about 25 by 10 feet. Several concrete corner pads were observed in the vicinity of the tank location. The pads were identified as the tank foundation.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

IX.A.22 PRELIMINARY REVIEW UNIT CHECKLIST – AOC 6

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: AOC 6

B. Description: Inactive Wastewater Lagoon, S99

C. Dates of Operation: NA

II. Wastes Managed: Sap wastewater and surface water runoff (historically when in operation) containing creosote residue

III. Evidence of Release: In 1979, a fire exposed the presence of creosote-contaminated soils. The contamination was determined to have resulted from pooling of facility wastewater in this area.

IV. Pollutant Dispersal Pathways: Soil and surface water

V. Summary: The inactive wastewater lagoon is a low-lying area, next to the inactive SI (SWMU 1). This area was periodically flooded and received discharges of sap wastewater and surface water runoff via the SDD (SWMU 2). In 1979, a fire in the area may have resulted from soil contamination within the area. The uppermost layer of soils in the lagoon area were scraped off and disposed of in the SI. The SDD was plugged to prevent further discharge into the area. The inactive wastewater lagoon was considered to be inactive following these actions. While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

APPENDIX II
SUMMARY OF WASTES MANAGED
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

NOR	Waste Description	Class	TCEQ Waste Code	EPA Waste Code	Disposition	Health, Safety and Risk Information
001/SWMU 1	Surface Impoundment Area	NA	219, 301, 488, 609	F034, K001, U051, U188	Removed from site	See NOR 004
002/SWMU 7	Tank car	Unknown	Unknown	Unknown	No longer generated	--
003	Sub-surface Tank	Unknown	Unknown	Unknown	No longer generated	--
004	Container Storage Area (Corrective Action Remediation Wastes)	1	00029032	Non-haz	Inactive	--
		1	04003011	Non-haz	Active	--
		2	14773012	Non-haz	Active	--
		1	14781011	Non-haz	Active	--
		2	14791012	Non-haz	Active	--
		2	14804062	Non-haz	Active	--
		2	14841012	Non-haz	Inactive	--
		1	09163081	Non-haz	Inactive	--
		H	0001301H	F034, K001	Active	Avoid all contact. If inhaled, provide fresh air, respiratory support. If in contact with skin, wash with soap and water. Rinse with water if contact with eyes. Seek medical attention. **F034, K001, and U051 (Creosote)**: Carcinogen; respiratory tract irritation, mild skin irritation, eye irritation; skin cancer. TWA 0.2 mg/m3; LC50 (*Oncorhynchus mykiss* 96 hr) 0.57 mg/L (very toxic to aquatic life); LD50 (rat oral) 2197 mg/kg; LC50 rat inhalation 4 hr) > 5 mg/L; LD50 (rabbit skin) > 2500 mg/kg; Reference: Koppers Safety Data Sheet Rev 2.03000 dated March 27, 2015. **U188 (Phenol)**: Central nervous system impairment, upper respiratory tract irritation, lung damage; TWA 5 ppm (19 mg/m3); LC50 (golden orfe 48-hr) 14 - 25 mg/L; LD50 (rat oral) 317 mg/kg; LC50 (rat inhalation 8-hr) 900 mg/m3; LD50 (rabbit dermal) 630 mg/kg Reference: Sigma-Aldrich Safety Data Sheet Revision 5.7 June 17, 2015.
		H	0909101H	F034, K001	Active	
		H	0912489H	F034, K001	Active	
		H	0914101H	F034, K001	Active	
		H	0915301H	F034, K001	Active	
		H	0917406H	K001	Active	
		H	0918219H	F034, K001, U051	Active	
		H	1481514H	D002	Active	
		H	1482110H	D002	Active	
		2	14835142	Non-haz	Active	--
005	Waste Pile	2	09024882	Non-haz	No longer generated	--
		2	09103072	Non-haz	No longer generated	--
		2	09113072	Non-haz	No longer generated	--

APPENDIX II
SUMMARY OF WASTES MANAGED
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

NOR	Waste Description	Class	TCEQ Waste Code	EPA Waste Code	Disposition	Health, Safety and Risk Information
006	Miscellaneous Storage Containers	1	2012061	Non-haz	No longer generated	--
SWMU 2	Northern and Southern Drainage Ditches	Unknown	Unknown	Unknown	No longer generated	--
SWMU 3	Oil Drum Storage (ODS) Building	Unknown	Unknown	Unknown	No longer generated	--
SWMU 4	Recent Process Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 5	Original Process Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 6	Water Treatment and Boiler System	Unknown	Unknown	Unknown	No longer generated	--
SWMU 8	Aboveground Storage Tank Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 9	Location of Former UST No. 44-023-05	Unknown	Unknown	Unknown	No longer generated	--
SWMU 10	Location of Former Sap Water Treatment Tank	Unknown	Unknown	Unknown	No longer generated	--
SWMU 11	Oil Water Separators	Unknown	Unknown	Unknown	No longer generated	--
SWMU 12	Railroad Tie Storage Area	Unknown	Unknown	Unknown	No longer generated	--
AOC 1	Diesel Storage Tank	Unknown	Unknown	Unknown	No longer generated	--
AOC 2	Hose House	Unknown	Unknown	Unknown	No longer generated	--
AOC 3	Contaminated Portion of City Water Line	Unknown	Unknown	Unknown	No longer generated	--
AOC 4	Location of Former Incinerator	Unknown	Unknown	Unknown	No longer generated	--
AOC 5	City Storm Sewer	Unknown	Unknown	Unknown	No longer generated	--
AOC 6	Inactive Wastewater Lagoon	Unknown	Unknown	Unknown	No longer generated	--
AOC 7	Location of Former UST No. 44-023-21	Unknown	Unknown	Unknown	No longer generated	--

XI. Compliance Plan

Groundwater Monitoring and Corrective Action Requirements for Regulated Units

Owners or operators of facilities that process, store, or dispose of hazardous waste may be required to establish groundwater monitoring and response programs in accordance with the provisions of 30 TAC 335.157. There are three types of groundwater monitoring programs which may be addressed in a Compliance Plan Application for Regulated Units: i) detection monitoring, ii) compliance monitoring, and iii) corrective action monitoring. The applicability of these various monitoring programs and the associated application requirements are illustrated in Figure 2 of the Compliance Plan Application instructions and further outlined below. A Compliance Plan Application will be required to be submitted when establishing a new compliance plan or incorporating changes in an existing compliance plan.

- **Detection Monitoring**: An owner/operator required to conduct detection monitoring per the requirements of 30 TAC 335.164 must monitor for indicator parameters, such as specific conductance, total organic carbon, and total organic halogen, as well as chemical parameters and hazardous constituents specified in the facility permit. If a statistically significant increase in any parameter or hazardous constituent specified in the facility permit is detected in any monitoring well down-gradient of the compliance point, the owner/operator must sample the groundwater in all monitoring wells and analyze the samples for the presence of 40 CFR Part 264 Appendix IX hazardous constituents. As shown in the accompanying Flow Diagram (see Figure 2), if the analytical results confirm the presence of Appendix IX constituents down-gradient of the compliance point, the owner/operator must submit a Compliance Plan Application to establish a compliance monitoring program or corrective action program.

- **Compliance Monitoring**: The requirements for compliance monitoring programs are detailed in 30 TAC 335.165. Owners/operators required to establish a compliance monitoring program must monitor the groundwater to determine whether Regulated Units are in compliance with the Groundwater Protection Standard (GWPS) specified in the compliance plan (see 30 TAC 335.158 - .160). If a statistically significant increase above the GWPS in any chemical parameter or hazardous constituent specified in the compliance plan is confirmed, the owner/operator must submit a application to modify the compliance plan to establish a corrective action program in accordance with 30 TAC 335.166 (see Figure 2). If no such exceedence of the GWPS is detected for three consecutive years and the applicable compliance period has expired, the owner/operator must apply for modification of the compliance plan to re-establish a detection monitoring program for the unit. No further monitoring will be needed if the applicable post-closure care period for the unit is complete.

- **Regulated Unit Corrective Action Program**: Owners/operators required to implement a corrective action program in accordance with the provisions of 30 TAC 335.166 must remove the hazardous waste constituents found in the groundwater or treat the groundwater in-place to levels equal to or less than the GWPS down-gradient of the compliance point. The owner/operator must also establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Corrective action measures may be terminated once the concentrations of hazardous constituents are reduced to levels equal to or below their respective concentration limits. After termination of the corrective action measures, the owner/operator must submit an application for modification of the compliance plan to re-establish a compliance monitoring program for the duration of the compliance period (see Figure 2).

Groundwater Corrective Action Requirements for Solid Waste Management Units (SWMUs)

- **HSWA Solid Waste Management Unit (SWMU) Corrective Action Program**: An owner/operator of a Permitted facility or an applicant applying for a hazardous waste permit is required to submit a Compliance Plan Application if hazardous constituents have been released from a SWMU and/or Area

of Concern (AOC) to the groundwater and exceeds background or Practical Quantitation Limit (PQL) values, if under Risk Reduction Rules 30 TAC 335 and/or appropriate Protective Concentration Limits (PCLs), if under Texas Risk Reduction Program Rules 30 TAC 350. The Permitted facility must implement a corrective action program for SWMUs and/or AOCs in accordance with provisions 30 TAC 335.167 (see Figure 3, page 122 of the instructions for example of process-alternate, but equivalent process may be authorized by the Executive Director).

Compliance Plan Application Form Structure:
The Compliance Plan Application consists of Sections XI.A. through E:

- Application Information Form:
  This section contains detailed information necessary for the application and regulatory requirements needed to put in the final compliance plan.

  The application form contains the following subsections:
  A. Site Specific Information
  B. Groundwater Protection Standard (GWPS)
  C. Compliance Monitoring Program
  D. Corrective Action Program
  E. Cost Estimates for Financial Assurance

  CP Attachments:
  A. Alternate Concentration Limits
  B. Well Design and Construction Specifications
  C. Sampling and Analysis Plan

- Compliance Plan Site Specific Tables:
  This section includes the following tables which are to be completed by the applicant, as applicable, and shall be incorporated as part of the final draft Compliance Plan. [Note: include a CD disk with the application providing an electronic copy of the files supporting the compliance plan tables, as applicable, in MS Word format]:
  - CP Table I – Waste Management Units and/or Areas Subject to Groundwater Corrective Action and Compliance Monitoring
  - CP Table II – Solid Waste Management Units and/or Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167.
  - CP Table III – CORRECTIVE ACTION PROGRAM Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard
  - CP Table IIIA – CORRECTIVE ACTION PROGRAM Table of Indicator Parameters and the Groundwater Protection Standard
  - CP Table IV – COMPLIANCE MONITORING PROGRAM Table of Hazardous and Solid Waste Constituents and Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring
  - CP Table IVA – COMPLIANCE MONITORING PROGRAM Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring
  - CP Table V – Designation of Wells by Function
  - CP Table VI – Compliance Period for RCRA-Regulated Units

Note to the Permittee: All responses to each item in Section XI of the application form should be entered immediately below the original text associated with the form. Do not delete any areas of the application form that are not applicable, retain these areas with a response of either 'Reserved' or 'Not Applicable' below the original text of the form. In addition, if material supporting a response is located elsewhere in the application, the response should provide details as to the specific location within the referenced material.

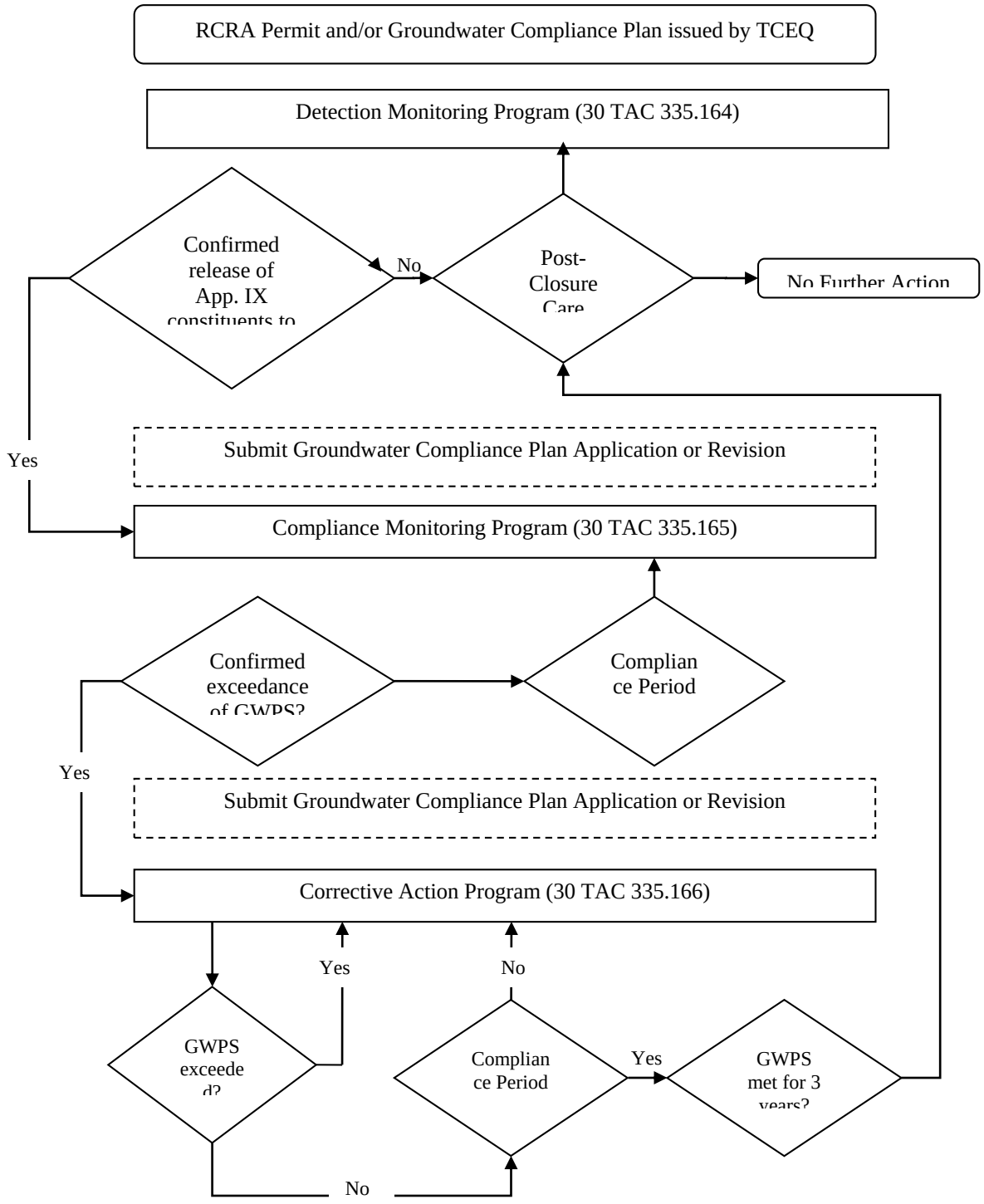
One of the primary goals of the performance based Compliance Plan is the wells listed in, CP Table V – Designation of Wells by Function (to be included in the final Compliance Plan) are the wells in which the GWPS must be met to verify compliance with Compliance Monitoring program or corrective action objectives, and to change the table would require a modification. On the other hand, the following types of wells Corrective Action Observation Wells, Corrective Action System well, etc., that are included in "Attachment A" maps of the final draft Compliance Plan, should be flexible. The purpose is to provide the permittee with the authority to alter the groundwater monitoring system and Corrective Action System designs, as necessary, to proactively address changing environmental conditions without modifying or amending the Compliance Plan. An application to modify/amend the compliance plan is only required if wells listed in CP Table V are changed; consequently, Corrective Action Observation and Corrective Action System Wells are not listed in CP Table V of the compliance plan so they may be added or removed without modifying/amending the compliance plan. Notification of proposed changes to the groundwater monitoring system and Corrective Action System designs can be included in the semiannual or annual report required by CP Table VIII – Compliance Schedule (to be included in the final Compliance Plan).

Figure 1
Overview of Required Submittals And Revisions Associated with TCEQ Groundwater Compliance Plan Application

Type of Compliance Plan Application or Revision	Minimum Required Submittals				Additional Application Submittals Or Revisions					
	Description of Modification	Public Notification Evidence	Fee Payment Evidence	Part B, Section I General Information	Section XI.A. Site-Specific Information	Section XI.B. Groundwater Protection Standard	Section XI.C. Compliance Monitoring Program	Section XI.D. Corrective Action Program	Section XI.E. Financial Assurance Cost Estimates	Attachment A Alternate Concentration Limits
RCRA Permitted Units										
Compliance Monitoring Program, commencement or modification per 30 TAC 335.165.	●	●	●	●	●	●	●	○	●	◒
Corrective Action Program, commencement or modification per 30 TAC 335.166.	●	●	●	●	●	●	○	●	●	◒
Compliance Period, termination or extension per 30 TAC 335.162.	●	●	●	●	◒	○	●	○	◒	○
Solid Waste Management Units										
Corrective Measure Implementation (CMI), per 30 TAC 335.167.	●	●	●	●	●	●	◒	●	●	○
Corrective Action Program termination.	●	●	●	●	◒	○	●	○	○	○

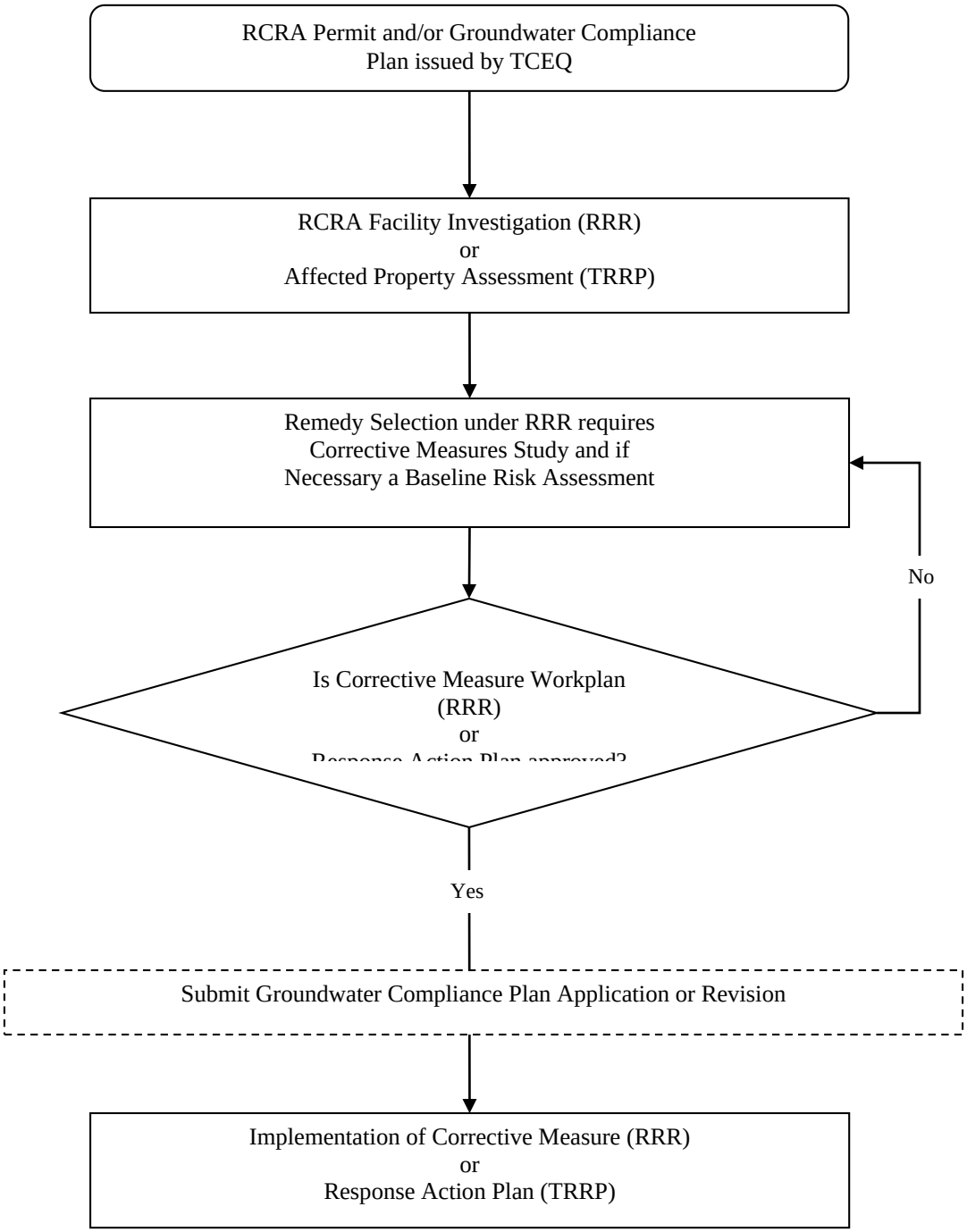
Note:
● =Submittal of additional or revised information required.
○ =No submittal of additional or revised information required.
◒ =Possible submittal of additional or revised information required.

Figure 2
Summary of Groundwater Monitoring and Compliance Plan
Application Requirements for Regulated Waste Management Units (30 TAC 335 Subchapter F)



Note:
- GWPS = Groundwater Protection Standard (See Section XI.B. of this document, and 30 TAC 335.158 – 160)
- App. IX = Groundwater Monitoring List, 40 CFR 264 Appendix IX.

Figure 3
Summary of Compliance Plan Application Requirements
for Solid Waste Management Units (SWMUS) (30 TAC 335.167)



Note:

(RRR) – Risk Reduction Rules, 30 TAC 335

A. SITE SPECIFIC INFORMATION

1. General Site Information (provide the following information):

   a. An overall plan view map of the entire facility delineating the facility's property boundary, Facility Operations Area (FOA) boundaries, as applicable, and the plume management zone (PMZ) boundaries as applicable;

   See CP Attachment A, Sheet 1 of 6 – Facility Map

   b. A 7.5 minute U.S.G.S. quadrangle topographic map showing the entire facility;

   See CP Attachment A, Sheet 2 of 6 – Topographic Map

   c. All oversized (larger than 8.5" by 11") drawings submitted in accordance with a and b, above, should be accompanied with legible photocopies of the reduced drawing on 8.5" by 11" sheet(s) of paper which shall be used as "CP Attachment A" maps in the final draft Permit/Compliance Plan. The applicant should title the map(s) accordingly as "CP Attachment A, Sheet 1 of xx – Facility Site Map"; "CP Attachment A, Sheet xx of xx, FOA Lateral Boundary Map"; "CP Attachment A, Sheet xx of xx, PMZ Boundary Location Map"; and

   The following maps are provided with this revision:
   - ***CP Attachment A, Sheet 1 of 6 – Facility Map***
   - ***CP Attachment A, Sheet 2 of 6 – Topographic Map***
   - ***CP Attachment A, Sheet 3 of 6 – Compliance Monitoring Well Network, SWMU 1***
   - ***CP Attachment A, Sheet 4 of 6 – PMZ Boundary Map, A-TZ***
   - ***CP Attachment A, Sheet 5 of 6 – PMZ Boundary Map, B-CZ/B-TZ***
   - ***CP Attachment A, Sheet 6 of 6 – PMZ Boundary Map, C-TZ***

   d. Aerial photographs through time depicting changes in the land use, if available.

   See Compliance Plan Figure XI.A.1.d (three years presented)

2. Waste Management

   Provide a complete list and a plan view drawing(s) locating and identifying the following waste management units at the scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). All oversized (larger than 8.5" by 11") drawings should be accompanied with legible photocopies of the reduced drawing on 8.5" by 11" sheet(s) of paper. Please provide information for each waste management unit listed below on Table XI.A.1. – Facility History for Waste Management Units.

   a. All hazardous waste management units regulated under the Industrial Solid Waste and Municipal Hazardous Waste Rules (Chapter 335) required to be monitored in accordance with 30 TAC 335.164 (Detection Monitoring), 335.165 (Compliance Monitoring Program) and 335.166 (Corrective Action Program);

   See Table XI.A.1 – Unit 001, SWMU 1 – Closed Surface Impoundment – all waste was removed in 1984 and the TCEQ granted no further action for the Corrective Action Monitoring for the unit in 2015 (See Section VII and Response Action Plan (CP Attachment XI.D)). The regulated unit will be monitored under the Compliance Monitoring Program (335.164). Location of

SWMU 1 shown on Compliance Plan Figure CP Attachment A, Sheet 1 of 5 – Facility Map, Figure CP Attachment A, Sheet 3of 6 - Compliance Monitoring Well Network, SWMU 1, and Figure XI.A.2.1.

b. All solid waste management units (SWMUs) and Areas of Concern (AOCs) regulated under 335.167 which are recommended for further investigation and/or corrective action in the RCRA Facility Assessment (RFA) shall include those identified in accordance with the permit requirements subsequent to the initial RFA.

See Table XI.A.1 for list, SWMUs and AOCs shown on Figures XI.A.2.1, XI.A.2.2, and XI.A.2.3.

c. All on-site wastewater treatment units.

Not Applicable

3. Facility History

Based on the information provided in Table XI.A.1., complete CP Table I – Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring accordingly in the format provided.

See Compliance Plan Table I (Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring).

For the SWMUs or AOCs listed in Table XI.A.1. regulated under 30 TAC 335.167 which are recommended for further investigation and/or corrective action in the RCRA Facility Assessment (RFA), including those identified in accordance with permit requirements subsequent to the initial RFA, complete CP Table II – Solid Waste Management Units and Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167. CP Table II will become part of the Compliance Plan.

See Compliance Plan Table II (Solid Waste Management Units and Areas of Concern for which Corrective Action Applies Pursuant to 30 TAC 335.167).

4. Site Geology, Hydrogeologic Conditions, and Relationship to Surface Water

For New, modified/amended Compliance Plan, please provide a Geology Report as required by Section VI.B of this application containing updated site geologic information including the following descriptions, maps and tables with appropriate supporting documentation [All maps should be at the scale of 1 inch equal to not more than 200 feet and legible when reduced to 8.5" by 11" letter size paper]:

a. A description of the site geology for the facility. The geologic description should include a site geology map and sufficient cross sections (see Item h. below) to describe the uppermost aquifer and any confining stratigraphic unit(s) beneath the site.

See Permit Section VI. Geology Report

b. A description of the site soils and subsurface lithologies using the Unified Soil Classification System. For those soil units which do not extend beneath the entire site area, the soil description should include a plan view map designating the soil's areal extent;

See Permit Section VI. Geology Report

c. Where a soil remedy is required in a corrective action program of Section XI.D.1. of this application for a Regulated Unit, SWMU and/or AOC, the applicant shall submit a description of contamination in soils of the vadose zone (unsaturated zone above the

uppermost aquifer). The soil description should include maps indicating lateral and vertical extent of contamination;

See CP Attachment XI.D – Response Action Plan – Attachment 1A

d. A description and designation of the uppermost saturated zone or uppermost aquifer including the name, the type of unit (e.g. perched, confined, etc.,), and groundwater characteristics (flow rates, directions, hydraulic conductivity, etc.). As defined in 40 CFR 260.10, an aquifer is a geologic formation, group of formation, or part of a formation, capable of yielding significant amount of groundwater to wells or springs. Persons using Texas Risk Reduction Program (TRRP) should also consider the definition of a groundwater bearing unit as a saturated geologic formation, group of formations, or part of a formation with a hydraulic conductivity of equal to or greater than 1 x 10 -5 centimeters/second (30 TAC 350.4(a)40).

See Permit Section VI. Geology Report and CP Attachment XI.D – Response Action Plan – Attachment 1A

e. Present the geologic, stratigraphic and hydrogeological information; and

See Permit Section VI. Geology Report

f. Maps indicating the lateral and vertical extent of the contamination for each stratigraphic unit affected, with supporting documentation.

See CP Attachment XI.D - Response Action Plan - Attachment 1A

g. Current Contaminant Plume Map(s) - Locating and identifying the extent of contamination as determined from previous monitoring on a separate facility base map(s). Locate and identify all monitor wells and waste management units/areas.

See CP Attachment XI.D - Response Action Plan - Attachment 1A

h. Cross section - Cross section transect lines should be indicated on the Contaminant Plume Map. The applicant, at a minimum, must submit two (2) stratigraphic cross sections for each waste management unit/area. One cross section should be drawn through all the point of compliance wells and the second cross section should be drawn along the direction of the movement of the contaminant plume released from the unit/area. Cross sections should follow the requirements outlined in the Geologic and Hydrogeologic Report of Parts IV and V of this application. At a minimum, the cross sections should include the following information:

i. the stratigraphic interpretation (e.g., surface grade, uppermost aquifer, aquiclude);
ii. lithology/geologic description of the uppermost aquifer and aquiclude;
iii. the potentiometric surface;
iv. detected non-aqueous phase liquids (NAPLs) and hazardous constituents; and
v. screen length and screen depth for each well in the cross section.

See CP Attachment XI.D – Response Action Plan – Attachment 1A

i. Well Construction diagram - The report should include a well construction diagram for all wells used in the cross section. The well construction diagram should include the information in "Attachment B" of this (Compliance Plan) application. The well construction diagram information may be included on the geologic cross-section(s).

See Permit Section VI, Appendix VI.B for Well Completion Records

j. Describe the potential for any surface water bodies to be hydraulically connected to groundwater containing hazardous constituents. Apply the guidance provided in Determining PCLs for Surface Water and Sediment, RG-366/TRRP-24 Revised, December 2002, in order to determine the water body type and applicable surface water criteria for human health, aquatic life and wildlife, as applicable.

See CP Attachment XI.D – Response Action Plan. The nearest surface water body is Buffalo Bayou, located approximately 1.6 miles southwest of the Site. The potential for lateral migration of groundwater from the Site to the southwest approximately 8,500 feet to Buffalo Bayou is not likely.

B. HAZARDOUS CONSTITUENTS IN GROUNDWATER AND GROUNDWATER PROTECTION STANDARDS (GWPSS)

Hazardous Constituents in Groundwater

For each contaminated hydrogeologic unit beneath a waste management unit/area (40 CFR 264.95), provide a list of all 40 CFR Part 264 Appendix IX hazardous constituents that have been detected in groundwater samples above background values, Practical Quantitation Limits (PQLs), or Method Quantitation Limits (MQLs). Please submit for each unit/area the most recent Appendix IX laboratory analysis results showing the constituents, constituent concentrations, methods used for analysis and associated laboratory QA/QC.

The groundwater samples (collected for the purpose of determining whether constituents listed in Appendix IX are present) shall be from each waste management unit/area monitoring well system as required by 30 Texas Administrative Code (TAC) 335.164 (detection monitoring program).

The only RCRA Permitted Unit is the Closed Surface Impoundment (SWMU 1), which will be monitored under the Compliance Monitoring Program detailed in Section XI.C. The remainder of the units will be handled using a facility-wide corrective action approach proposed to go under Corrective Action Monitoring with specified analyte lists (See Compliance Plan Table III and IIIA).

If the waste management unit/area is subject to Corrective Action Program required by 30 TAC 335.166 or 335.167 and/or Compliance Monitoring required by 30 TAC 335.165, then list the unit/area and include the list of hazardous constituents and their principal degradation constituents in:

- CP Table III – Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard; and

See Compliance Plan Table III (Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) for the facility-wide corrective action subject to the Corrective Action Program.

- CP Table IV – Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring.

See Compliance Plan Table IV (Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Quantitation Limits) for SWMU 1.

Groundwater Protection Standards (GWPSs)

The GWPS (30 TAC 335.158) is designed to ensure that hazardous constituents (30 TAC 335.159) identified in groundwater and their principal degradational constituents do not exceed concentrations that pose a present or potential hazard to human health and the environment. Compliance monitoring and corrective action programs for a Regulated Unit (30 TAC 335.165 and 335.166) and a corrective action program for a solid waste management unit (SWMU) (30 TAC 335.167) require human health and the environment to be protected from all releases of hazardous wastes and constituents. These corrective action and monitoring programs are evaluated using the GWPS. The GWPS is based on the following criteria.

a. Background Levels - Background levels authorized under 30 TAC 335.160(a)(1) are defined as constituent concentration values that are naturally occurring or are not influenced by contamination coming from the waste management unit. These values are established by statistical analysis of upgradient well sampling data. Analytical results from

a sufficient number of independent samples are required to be utilized with an approved and appropriate statistical method. For guidance on the statistical methods consult, Statistical Analysis of Groundwater Data at RCRA Facilities-Unified Guidance, U.S. EPA, March 2009, and any subsequent updates to this document.

Not applicable.

Practical Quantitation Limits (PQLs) or Method Quantitation Limits (MQLs) are utilized in lieu of background values unless a background demonstration establishes concentrations for naturally occurring constituents. The PQL or MQL is defined in the footnote of CP Tables III and IV.

No PQLs or MQLs are used on CP Table III. MQLs as determined by the analytical methods of the EPA SW-846 most recent edition, are provided for the Compliance Monitoring constituents on CP Table IV with associated footnotes.

b. Primary and Secondary Maximum Contaminant Levels (MCLs) - Maximum permissible level of a contaminant in water which is delivered to any user of a public water system (40 CFR Part 141 and 143, Federal Safe Drinking Water Act).

See Compliance Plan Table III (Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) and associated footnotes.

c. Alternate Concentration Limits (ACLs) determined in accordance with 30 TAC 335.160(b) and are defined in footnote of CP Tables III and IV.

As discussed in the RAP (Attachment XI.D), TCEQ Protective Concentration Levels (PCLs) are the regulatory standards that apply at groundwater alternate points of exposure (POEs) for a particular groundwater exposure pathway, as set in the Title 30 Texas Administrative Code Chapter 350 Texas Risk Reduction Program (TRRP). Therefore, for this compliance plan, the proposed ACLs shall be based on TRRP PCLs ($^{GW}GW_{Ing}$). The PCLs may change as updates to the TRRP Rule are promulgated.

ACLs apply at the proposed alternate POEs. Where the groundwater POE is located at a distance from the plume management zone (PMZ), the ACL considers COC attenuation along the groundwater flow path between the AMPs and POE locations. These attenuation-based ACLs are referred to as attenuation action levels under TRRP. In the cases of PMZs, applicable PCLs under Remedy Standard B will be used to also verify compliance at POEs. Since groundwater impacts are both on-site and off-site, PMZs have been established for on-site (Main and West) using the commercial/industrial PCL for Class 2 groundwater ingestion ($^{GW}GW_{Ing}$), and for off-site (including City of Houston right of way (ROW)) using the residential PCL for Class 2 groundwater ingestion ($^{GW}GW_{Ing}$).

See Compliance Plan Table III (Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) for the list of constituents and groundwater POE concentrations, and associated footnotes.

1. Establishing the Groundwater Protection Standard (GWPS)
   a. If background, PQL or MQLs are proposed for the GWPS, the applicant must list all constituents (i.e., detected and degradational constituents) for which a GWPS is being applied for and the appropriate concentration limits. This information shall be submitted in the format of CP Tables III, and IV.

The GWPS are the regulatory groundwater standard(s) for a COC that establish compliance and

apply at POE wells as part of the PMZ. In the cases of PMZs and POEs, PCLs will be used to verify compliance.

See Compliance Plan Table III (Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard).

b. Alternate Concentration Limits (ACLs) - ACLs are established at the point of compliance (POC) for a regulated or solid waste management unit (SWMU). All concentration values or limits listed in Section XI.B.1.c. are considered ACLs. ACLs are evaluated in accordance with the provisions of 30 TAC 335.160(b) and other regulations acceptable to the executive director. If an ACL is requested on the basis of Section XI.B.1.c. (MCLs), then no ACL demonstration is necessary. The ACL demonstration must establish constituent concentrations in groundwater in accordance with regulations acceptable to the executive director. This information shall be submitted in the format of CP Tables III and IV. Note that depending upon the rule employed [i.e., 30 TAC 335 Subchapter S – Risk Reduction Rules (RRR) or 30 TAC 350 – Texas Risk Reduction Program (TRRP)], the applicant should determine the GWPS for the point of compliance and point of exposure, as applicable, in accordance with the remedy standard being utilized.

   If the contaminant plume discharges or has a potential to discharge into surface water, then the facility must also comply with 30 TAC Chapter 307 (Texas Surface Water Quality Standards) unless other regulatory requirements acceptable to the executive director are requested.

See Compliance Plan Table III (Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) for list of ACLs.

See Compliance Plan Table IVa (Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Quantitation Limits) for SWMU 1 ACLs for POC wells.

"Attachment A" of this Compliance Plan Application provides a summary of regulatory requirements for an ACL demonstration in accordance with 30 TAC 335.160(b).

Proposed ACLs are based on the TRRP PCLs as described above in XI.B.1.c. Where the POE is at a distance from the POC (i.e., edge of the groundwater PCLE Zone), TRRP PCLs directly apply at the POE. See CP Attachment XI.A (Alternate Concentration Levels) for additional discussion.

C. COMPLIANCE MONITORING PROGRAM

As required by 30 TAC 335.165, an owner or operator must monitor the groundwater to determine whether Regulated Units are in compliance with the Groundwater Protection Standard (GWPS) under 30 TAC 335.158. The applicant must provide the following information when proposing a compliance monitoring program.

The one regulated unit, Closed Surface Impoundment (SWMU 1), received a "no further action" from the TCEQ Corrective Action Division in a letter dated August 5, 2015. SWMU 1, which was closed in 1984, achieved the response action objectives for Remedy Standard A requirements under 30 Texas Administrative Code (TAC) §350.32. With the NFA from Corrective Action Monitoring, the regulated unit will be monitored through the Compliance Monitoring Program.

The other SWMUs and AOCs will be addressed through the facility-wide Corrective Action Monitoring Program (see Section XI.D).

a. Groundwater Monitoring Program Description

Describe the proposed groundwater monitoring system to be used to monitor compliance with the GWPS which includes the following information.

(1) Changes, if applicable, from the current detection monitoring system or compliance monitoring system groundwater monitoring program at the waste management unit that will be required to comply with the compliance monitoring program described in 30 TAC 335.165. This description should address changes concerning:

Not applicable, the regulated unit (SWMU 1) is transitioning from Corrective Action Monitoring to Compliance Monitoring as part of this permit renewal. Since there is no information in the current Permit detailing Compliance Monitoring, this permit renewal only contains the proposed Compliance Monitoring activities as discussed in Section XI.C.a.2.

(a) Geological and/or hydrogeological information differences since the submittal of the previous application [must submit an updated Geologic and Hydrogeologic Report required by Section XI.A.4];

No changes for SWMU 1, see Permit Section VI. Geology Report

(b) Waste management areas/units;

Solid Waste Management Unit (SWMU) 1

(c) Construction details for monitor wells to evaluate compliance with "Attachment B" well specification requirements;

See Table XI.C.a.1.c in Attachment B.

(d) The number and locations of additional monitor wells [also see Section XI.C.1.b.(2)];

Not applicable, no new wells planned for the SWMU 1.

(e) Sample handling, chain of custody, and analytical procedures (also see "Attachment C");

See CP Attachment XI.C (Sampling and Analysis Plan)

(f) Frequency of monitoring;

The parameters listed in CP Table IV and CP Table IVA (Compliance Monitoring Program Table of Detected Hazardous Constituents and the Groundwater Protection Standard) will be monitored on an annual and semi-annual basis, respectively.

(g) Monitoring parameters;

The parameters listed in CP Table IV and CP Table IVA (Compliance

Monitoring Program Table of Detected Hazardous Constituents and the Groundwater Protection Standard) will be monitored on an annual and semi-annual basis, respectively.

(h) Evaluation of compliance with GWPS (Statistical Methods);

Evaluation of compliance will be conducted using either direct comparison to GWPS listed on CP Table IVA or using statistical procedures, as discussed below:

- ***Directly compare the value of each constituent to the respective concentration limit of CP Table IVA and determine if it is less than, equal to, or greater than the listed value. If the values for all the constituents are less than or equal to the respective concentration limits of CP Table IVA, then the well shall be considered compliant with the GWPS for the sampling event. If one or more constituent value is greater than the respective concentration limit, then the well will be considered non-compliant with the GWPS for the sampling event. However, it is important to note that this method is susceptible to a high rate of false positives***

- ***Statistical approach using the Confidence Interval Procedure for the mean concentration based on a normal, log-normal, or non-parametric distribution. The 95 percent confidence coefficient of the t-distribution will be used in constructing the confidence interval (Chapter 21 of Statistical Analysis of Groundwater Data at RCRA Facilities-Unified Guidance, U.S. EPA, March 2009), and subsequent updates acceptable to the Executive Director. The confidence interval lower limit (LCL) for each constituent will be compared with the corresponding concentration limit in CP Table IVA for compliance monitoring. To be considered in compliance, the confidence interval lower limit for a well in question must not exceed the tabled concentration limit. A confidence interval lower limit above the tabled concentration limit shall be considered as evidence of statistically significant contamination and the well will be considered non-compliant with the GWPS for the sampling event.***

- ***As part of the evaluation of compliance, a verification resampling procedure will also be employed at the facility whenever an unverified, initial exceedance is detected either through direct comparison or statistically. The verification resampling will follow a "pass 1 of 2" resamples to verify an initial exceedance of the GWPS.***

(i) Other Sampling and Analysis Plan information to be compliant with "Attachment C";

See CP Attachment XI.C (Sampling and Analysis Plan)

(j) Compliance period as defined in Section XI.E.1.c. of the application;

See CP Table VI

(k) Financial assurance (see Section XI.E.); and

See Section XI.E (Cost Estimates for Financial Assurance)

(l) An ACL variance under 30 TAC 335.160(b), if applicable (also see "Attachment A").

See Section XI Attachment A (Alternate Concentration Levels)

(2) The number, depth and location of all monitor wells (Background Wells, Point of Compliance Wells, Observation Wells, Piezometers, etc.). Complete CP Table V – Designation of Wells by Function and make changes as applicable to plans referenced in Section XI.C.1.b.

See Table XI.C.a.1.c in Attachment B and Compliance Plan Table V (designation of Wells by Function).

(3) The proposed hazardous constituent monitoring list which is based on constituents that were monitored during detection monitoring (if applicable), constituents detected in accordance with 30 TAC 335.164, and degradational constituents identified in Table CP IV accordingly to develop the constituent list for the Compliance Monitoring Program. Also, list the PQL, MQL, or background concentration for each constituent in CP Table IV. CP Table IV shall become part of the final Compliance Plan to be analyzed at least annually as required by 30 TAC 335.165(7).

See Compliance Plan Table IV (Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Quantitation Limits) for SWMU 1.

(4) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table IV., complete CP Table IVA – Compliance Monitoring Program, Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring, accordingly. CP Table IVA shall become part of the final Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.165(6).

See Compliance Plan Table IVA (Compliance Monitoring Program Table of Detected Hazardous Constituents and the Groundwater Protection Standard) for SWMU 1.

(5) Monitoring frequency.

Semi-annual monitoring frequency from the SWMU 1 POC and Background Wells to be conducted within 30 days of the beginning of the first and third quarters of each year.

(6) Provisions for reporting of groundwater data at least on an annual basis.

Reporting of groundwater data as part of the Compliance Monitoring will be reported annually in the Annual Groundwater Compliance Monitoring Report. Reporting schedule is provided in CP Table VIII.

(7) Annual determination of contamination plume rate and direction of migration.

As will be presented in the Annual Groundwater Compliance Monitoring Report, contaminant plume rate and direction of migration will be estimated.

(8) Compliance period. Calculate the compliance period as required by 30 TAC 335.162 and 335.165(1)(d). Include calculations and complete CP Table VI – Compliance Period for

RCRA-Regulated Units which shall become part of the final Compliance Plan.

See CP Table VI.

b. Submit the following plans and reports.

(1) Current Sampling and Analysis Plan - The Sampling and Analysis Plan must include information required by 30 TAC 335.163(4) and 335.163(5) and 40 CFR Subpart 270.30(j). For guidance, please see "Attachment C" to the application.

See CP Attachment XI.C (Sampling and Analysis Plan)

(2) Monitoring System Plan - If the applicant is proposing a monitoring well or a monitoring system in the application, the applicable well installation specifications outlined in "Attachment B" of this application should be followed. All new monitoring wells must be installed in accordance with the specifications outlined in "Attachment B", unless an alternative design is approved by the agency prior to installation. If the applicant proposes as part of the monitoring system, any well (existing or proposed) that does not meet or exceed the requirements outlined in "Attachment B", then the proposed alternative design must be described in detail in the Monitoring System Plan and must be submitted with this application. The Monitoring System Plan must include:

(a) Monitoring System Design and Specifications - Certified by a qualified engineer and/or geologist which provides detailed plans and specifications on the monitoring system design; and

(b) Well Drilling and Well Casing Specifications - Certified by a qualified engineer and/or geologist which provides details on well casing specification, drilling logs and reports.

See CP Attachment XI.B (Well Design and Construction Specifications). No alternative designs are proposed as part of this application.

(3) Current Geologic and Hydrogeologic Report - Provide a report per Section X.I.A.4 of this application discussing the geologic and hydrogeologic conditions of the facility and the specific area affected by the waste management areas. This report should include the most up-to-date information from which the design of the groundwater monitoring system was based.

See CP Attachment XI.D – Response Action Plan – Attachment 1A for up-to-date geologic and hydrogeologic information used to develop the groundwater monitoring system.

1. <u>Waste Management Units Monitored</u>

a. Delineate and identify the following for each waste management unit in the proposed groundwater monitoring program.

(1) Boundary of the waste management unit and, if applicable, the proposed waste management area which includes more than one waste management unit (identify all waste

management units which are included in the waste management area). These waste management units subject to compliance monitoring should be listed in CP Table I – Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring which shall become part of the final Compliance Plan.

The WMU to be monitored under the Compliance Monitoring Program is SWMU 1, listed on CP Table 1 and shown on CP Attachment A, Sheet 3 of 6 – Compliance Monitoring Well Network, SWMU 1.

(2) The proposed point of compliance (30 TAC 335.161) and point of exposure wells.

Shown on CP Attachment A, Sheet 3 of 6 – Compliance Monitoring Well Network, SWMU 1.

(3) Any other proposed monitor wells such as supplemental wells, observation wells, background wells, etc. If appropriate the groundwater monitoring system should have a sufficient number of wells be designated to monitor the downgradient extent of the plume.

Shown on CP Attachment A, Sheet 3 of 6 – Compliance Monitoring Well Network, SWMU 1.

(4) Features which may serve as conduits for subsurface contamination.

Not Applicable

b. For each waste management unit/area in the proposed groundwater monitoring system, submit the locations of individual waste management unit/area monitor wells (existing or proposed) and any soil borings (plugged and unplugged) specifically drilled for assessment of contamination. These individual monitor wells shall be identified by respective well number on a plan view drawing and only the background, point of compliance and/or point of exposure wells should be indicated in CP Table V – Designation of Wells by Function. The plan view map depicting the location of individual monitoring wells for compliance monitoring should be labeled as "CP Attachment A, sheet xx of xx" in the text box. The title box should also include reference to the facility name, Permit/Compliance Plan Number, Solid Waste Registration Number, Unit Description or name with Notice of Registration (NOR) Unit No. 0000. The "CP Attachment A" map(s) and CP Table V shall also become part of the final Compliance Plan.

Shown on CP Attachment A, Sheet 3 of 6 – Compliance Monitoring Well Network, SWMU 1.

2. Implementation Schedule

Itemize and discuss, in detail, the estimated time schedule necessary for any testing and assessments, system design, construction and installation, and final implementation of the groundwater monitoring program for each Regulated Unit and solid waste management unit. If the schedule of implementation for items are not completed at the time of the application, or are not completed at the time of issuance of the final draft Permit/Compliance Plan, then the items should be added to the CP Table VIII - Compliance Schedule of the application.

No additional wells are needed. See CP Table VIII for the compliance schedule.

D. CORRECTIVE ACTION PROGRAM

As required by 30 TAC 335.166, the owner or operator must take corrective action to ensure that Regulated Units are in compliance with the Groundwater Protection Standards (GWPS) under 30 TAC 335.158. As required under 30 TAC 335.167, all releases of hazardous constituents from any solid waste management unit at the facility must also be addressed. For existing corrective action programs which have been approved by the TCEQ, the applicant shall provide a copy of the TCEQ corrective action system approval letter, design system specifications and any updates as requested in Section XI.D.3.a.(1) of this section. The applicant must provide the information requested below when proposing a corrective action program which has not been previously approved by the TCEQ including a detailed description of a corrective action or a combination of corrective actions that will remedy the groundwater contamination at the waste management unit and a proposed plan for a monitoring program that will demonstrate the effectiveness of the corrective action.

The owner or operator may also apply for a the Facility Operations Area (FOA) pursuant to the requirements of 30 TAC 350.131 - 350.135 of the Texas Risk Reduction Program (TRRP) rules, provided the applicant meets the FOA pre-approval process steps 1 through 3 approved by the Commission.

Also, the owner or operator may apply for alternative groundwater Corrective Action Program pursuant 30 TAC 335.151, 335.156 and 30 TAC 350, where there are commingled releases from RCRA-regulated unit from one or more SWMUs, PCO, and/or AOC.

As detailed in the RAP (CP Attachment XI.D,) the goal of the corrective action program is to comply with TRRP-based GWPS at the alternate point of exposure (POE) wells at the plume management zone (PMZ) boundary using the facility-wide corrective action approach. A modified Remedy Standard B groundwater response action objective (RAO) will be conducted at the Site through control using a PMZ and Technical Impracticability (TI) Zone. Monitored natural attenuation (MNA) is proposed as a control response to address the PCLE Zones within the PMZs. Within the PMZ and TI Zone, the NAPL response endpoint for the creosote DNAPL will be through the control (via TI) endpoint. The response objective will be to control the creosote DNAPL by physical (recovery from monitoring wells with DNAPL present) or natural means (natural source-zone depletion through biodegradation) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met.

1. Type of Corrective Action Proposed

   From the list below, indicate the type of groundwater corrective action proposed for each hazardous waste unit/area. Discuss in detail if more than one corrective action is to be used in a waste management area. Submit the discussion and descriptions as an attachment to the application.

   a. Groundwater well recovery with surface treatment
   b. Groundwater well recovery/surface treatment/re-injection
   c. Groundwater well recovery and disposal
   d. Vapor extraction system
   e. Interceptor trench recovery and disposal
   f. Interceptor trench recovery and surface treatment
   g. In-situ treatment – bioreclamation
   h. In-situ treatment – chemical reaction
   i. Barrier walls/encapsulation

j. Permeable treatment beds

k. Other, please describe

As discussed in the RAP (CP Attachment XI.D), UPRR initiated a 24-month pilot study in February 2013 through January 2015 to evaluate DNAPL recovery at the Site by conducting tests on selected monitoring wells where DNAPL had been observed. Details of the scope of work for the pilot test were submitted to the TCEQ in a letter dated February 5, 2013 (PBW, 2013). A copy of the scope of work is provided in Appendix 3 of the RAP. The pilot test procedures consist of measuring the depth to groundwater surface, the depth to the groundwater/DNAPL interface, and the total depth of the well relative to the top of well casing prior to DNAPL recovery. Using a peristaltic pump, DNAPL is pumped from the bottom of the monitoring well until groundwater is returned in the pump discharge. The volume of recovered DNAPL is estimated from each well, and the well is gauged to measure the total depth of the well and depth to residual DNAPL following pumping. Recovered DNAPL is temporarily stored at the Containment Storage Area. PBW submitted to the TCEQ in a letter dated April 9, 2105 the results of the 24-month pilot test. A copy of the letter is also provided in Appendix 3 of the RAP. The conclusions from the pilot test included that once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested, and current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time. More frequent DNAPL recovery would not likely be effective at the Site. The report indicated that monthly DNAPL recovery activities following the procedures listed in the pilot test work plan would continue at the Site. DNAPL recoverability, including recovery frequency and wells included in the DNAPL Recovery Activities will be evaluated on an annual basis as part of the post-response action care reporting.

2. Program Description

Attach a technical report providing a detailed description of a complete corrective action system including above and below ground equipment/facilities. Include discussions on the following concerns for each type of corrective action as applicable.

See RAP (CP Attachment XI.D).

a. Recovery Wells
Not Applicable

(1) Indicate on a plan view of the waste management area the anticipated location of Recovery Well(s) which would optimize the extraction of the groundwater contaminants.
(2) Indicate on a plan view the estimated radius of influence of each Recovery Well.
(3) Indicate the optimum pumping rate of each Recovery Well determined from the aquifer pump test.
(4) Describe the design of the Recovery Wells and pump system including diameter, construction material, gravel packing, screen slot sizes and patterns, type of pumps and maintenance requirements.
(5) Describe the collection and storage of the contaminated groundwater which is classified hazardous waste (on-site storage of hazardous waste shall require compliance with the applicable regulations):
(c) Less than 90-day tanks (see 40 CFR 262.34/40 CFR 265 Subpart J);
(d) Permitted Tanks (see 40 CFR 264 Subpart J);
(e) Less than 90-day Container Storage Area (see 40 CFR 262.34/40 CFR 265 Subpart I);
(f) Permitted Container Storage Area (see 40 CFR 264 Subpart I); and

(g) Temporary Units (see CFR 264.553).

(6) Describe the treatment and/or final disposition of the hazardous and nonhazardous contaminated groundwater.

b. Vapor Extraction System

Not Applicable

(1) Indicate on a plan view of the waste management area the anticipated location of the vapor extraction system which would optimize the extraction of hazardous constituents from the vadose zone.
(2) Describe the construction design of the vapor extraction system in detail, including all diagrams and drawings.
(3) Describe the emission control equipment used to comply with air quality regulations.
(4) Provide the anticipated volatile contaminants to be remediated along with information on the expected effectiveness of the vapor extraction system at the waste management unit.
(5) Provide established treatability data for the proposed design.
(6) Specify the hazardous constituents affected by this type of treatment.

c. Interceptor Trenches

Not Applicable

(1) Indicate on a plan view of the waste management area the anticipated location of the interceptor trench.
(2) Provide the construction design.
(3) Describe the procedure for construction.
(4) Describe the liquid removal and collection system.
(5) Describe the surface storage and/or treatment of the contaminated groundwater.
(6) Describe the final disposition of the contaminated groundwater.

d. In-situ Treatment – Chemical Reaction

Not Applicable

(1) Characterize the chemical agents to treat the contaminated groundwater and/or soils in the vadose zone.

(2) Provide laboratory treatability data.
(3) Specify the hazardous constituents affected by this type of treatment.
(4) Specify the reaction by-products produced during the chemical reactions.
(5) Indicate degradation time for each treated hazardous constituent and any resulting chemical reaction by-products.
(6) Describe the potential health risks caused by human exposure to the reaction by-products.
(7) Describe potential damage to wildlife, crops, vegetation and physical structures caused by exposure to reaction by-products.
(8) Describe the persistence and permanence of the potential effects of the reaction by-products.
(9) Describe the method of chemical reactant injection and other important aspects of the system design.

e. In-situ Treatment – Bioreclamation

Not Applicable

(1) Describe the type of bacteria most appropriate for the degradation of the hazardous constituents present in the groundwater and/or soil in the vadose zone.
(2) Describe the nutrients necessary and application frequency to encourage effective bioreclamation.
(3) Provide laboratory data from treatability studies utilizing the contaminated groundwater and describe any potential hazardous by-products.
(4) Indicate the degradation time for each hazardous constituent affected by this treatment.
(5) Describe the method of injecting the bacteria and nutrients and describe the delivery system design.

f. Barrier Walls

Not Applicable

(1) Provide laboratory permeability data using the actual contaminated groundwater.

(2) Describe the barrier wall materials.
(3) Summarize construction design and installation procedures.

g. Permeable Treatment Beds

Not Applicable

(1) Provide laboratory data of treatability simulations using actual contaminated groundwater in combination with the material proposed to be used in treatment beds.

(2) Discuss the properties of the treatment material which would make it effective for use at this site.
(3) Indicate which hazardous constituents will be affected by this treatment. Indicate the reactions which will take place and the resulting reactant by-products. Discuss the anticipated lifetime of the permeable treatment beds.
(4) Provide the construction design and installation procedures.

h. Other

Discuss in detail, any other corrective action (soils and groundwater) not included above which is proposed for use at the affected waste management area(s).

<u>Soils</u>

As detailed in the RAP (CP Attachment XI.D – Worksheet 1.0), the RAOs for surface and subsurface soil PCLE Zones is to control exposure through Remedy Standard B using physical barriers such that commercial/industrial workers will not be exposed to concentrations of COCs in excess of the critical human health PCLs (§350.33(a)(1)). In addition, COC concentrations in the surface and subsurface soils will not create a leachate that will lead to cPCL exceedances at the point of exposure wells within the proposed PMZ. For surface soils, the Remedy Standard B RAOs will include the following approaches based on the area of the Site:

- ***Former HWPW area**: Using the Area of Contamination (AOC) policy, surface soils with cPCL exceedances in the Inactive Wastewater Lagoon (AOC 6), near the Location of the Former Incinerator (AOC 4) surrounding the Tank Car Storage Area (SWMU 7) and Oil/Water Separators (SWMU 11), and areas north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5) and AST Area (SWMU 8) will be consolidated in the area of SWMUs 4, 5, and 8. As allowed under the EPA AOC policy, soils may be consolidated within the AOC (defined at the Site as the "Affected Property") and not be considered to be removed from the land or generated. Soils removed from the proposed areas will be conducted under Remedy Standard A. The removal action has been designed to remove surface soils containing COCs at concentrations exceeding the critical PCLs (primarily $^{Tot}Soil_{Comb}$ PCLs) as shown on Attachment 2A-1a and 2A-1b of the RAP (CP Attachment XI.D)). The surface soils will be excavated to the vertical extent of the PCLE zone, estimated to be a maximum of approximately 3 feet deep (no greater than 5 feet deep). Soils will be placed within the AOC near SWMU 4, 5 and 8 and covered with an engineered soil cap (Attachment 2A-1a of the RAP (CP Attachment XI.D)). Based on the current areas delineated, the estimated volume of soil to be consolidated is approximately 9,800 cubic yards. The AOC approach was approved by the TCEQ in a letter dated November 5, 2015 (a copy of the letter is provided in Appendix 3).***

  To protect on-site commercial/industrial receptors, a vapor barrier with geotextile fabric, and an engineered soil cap (12-in clayey soil, 6-in topsoil) will be constructed to cover the consolidated soil and surface soil PCLE Zone on the former HWPW area (Attachment 2A-1a of the RAP (CP Attachment XI.D)). The soil cap will be vegetated (with a pollinator /grass mix to attract pollinators in the area) and sloped to minimize infiltration over the surface/subsurface soil PCLE Zone. The vegetated cap will be maintained under the post-response action care. In the areas where surface soils will be removed, subsurface soils do not appear to be impacted above cPCLs. The subsurface soil PCLE Zone within the HWPW area appears to be only in the areas where the proposed engineered soil cap with vapor barrier will be constructed. The proposed vapor barrier will address the $^{Air}Soil_{Inh\text{-}V}$ PCLE Zone for naphthalene detected in the subsurface soils within and near SWMU 5. Engineering details for the soil cap are provided in Attachment 2A-3 of the RAP (CP Attachment XI.D) (Engineering Drawings of the HWPW Soil Cap and Roadway Improvements).

  For the SDD (SWMU 2) along the southern boundary of the HWPW (Attachment 2A-1a of the RAP (CP Attachment XI.D)), UPRR will construct an asphalt roadway to protect on-site commercial/industrial receptors in this area. Currently, a gravel service road used by UPRR is present in this area. Construction of the asphalt road will consist of grading the existing road material, compacting and stabilizing the existing road material, and applying a hot mix asphalt (2-inches minimum) cover. The asphalt road will be maintained under the post-response action care.

  In addition, underground tanks listed as SWMU 11 (Oil/Water Separators) will be removed, properly disposed of, and the excavation backfilled with clean soil.

- ***City of Houston ROW**: The off-site area immediately north of the AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road (approximately 6 feet wide and 550 feet long) will be addressed through a combination of soil excavation (as part of the AOC to be placed within the capped area) and construction of a concrete sidewalk (+/-800 linear feet) to restrict exposure to the surface soil PCLE zone. A large diameter (8-in) gas utility line is present in the ROW within top five feet. To limit disturbance of the gas utility line, UPRR will excavate the top 9 inches of soil*

within the surface soil PCLE Zone off-site and construct a reinforced concrete sidewalk and side slope to serve as a physical barrier in the area. Details of the concrete sidewalk construction are provided in Attachment 2A-3. The concrete sidewalk will be routinely inspected as part of the post-response action care. An institutional control will be placed on the City of Houston ROW to maintain the physical control on surface soils (Appendix 5 of the RAP (CP Attachment XI.D)).

- ***<u>Englewood Intermodal Yard area</u>: The surface and subsurface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with impacted soils for on-site workers. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be routinely inspected to ensure on-site worker protection. Attachment 2A-1a shows the Surface Soil Affected Property and its location beneath the concrete parking lot on the Site. In addition, storm drains within the proposed response action area will be inspected and sediment in the drains if present will be sampled to evaluate if COCs from surface soils have migrated into the storm water drainage system.***

- ***<u>UPRR Main Lines Ballast Area:</u> The area between the former HWPW area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. UPRR proposes to use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. The railroad ballast area will be maintained as part of normal railroad operations. The track is owned and controlled by UPRR. In the event construction activities are necessary within the railroad ballast area, a health and safety plan will be implemented to ensure worker protection from COCs in the surface soils and a soil management plan will be developed if soils are excavated as part of the construction activities.***

  The Affected Property (including the entire HWPW and Englewood Intermodal Yard Area) will also be deed restricted for commercial-industrial land use and for the use of a physical controls on surface and subsurface soil in accordance with §350.31(g). Institutional controls will also be used to prevent exposure to the COCs in the surface and subsurface soils. Deed restriction of the Site to commercial-industrial use will limit future use and document the use of the physical barrier for surface soils. The PCLE zones for surface and subsurface soils are in an area with restricted property access.

<u>Groundwater</u>
The response action design for the groundwater PCLE Zones will be to implement the modified Remedy Standard B groundwater response action through use of two approaches:

1. ***PMZs (On-Site (Main and West), Off-Site, and Off-Site City of Houston ROW) for the groundwater PCLE Zones in the A-TZ, B-CZ, B-TZ, and C-TZ (discussed in Worksheet 2.1 of the RAP (CP Attachment XI.D));***
2. ***Where creosote DNAPL has been observed in soil boring logs and/or monitoring wells, a TI Zone is proposed for those GWBUs A-TZ, B-CZ, B-TZ, and C-TZ (discussed in Worksheet 2.3 of the RAP (CP Attachment XI.D))***

For the PMZ, MNA will be used for the physical control mechanism, which has shown to be a control for migration of the COC groundwater plumes. An evaluation of historical groundwater monitoring data and data trends for the Site indicates that natural attenuation of COCs in groundwater is occurring (Attachments 1A (evaluation of recent groundwater data) and 1B

(concentration versus time graphs) of the RAP (CP Attachment XI.D)). Site-specific COCs will be monitored to ensure the levels of these constituents remain stable and below cPCLs at the point of exposure (POE) wells as well as below the attenuation action levels (AAL) at the attenuation monitoring points (AMP) (Attachment 2A-2 of the RAP (CP Attachment XI.D)). Groundwater monitoring will be used to confirm the continued natural attenuation of COCs to concentrations below cPCLs throughout the PCLE zone; however, this will not likely be achieved in a reasonable timeframe given the presence of creosote DNAPL. Groundwater monitoring will be performed on a semi-annual basis. For the purposes of this RAP submittal, there will be four overall PMZ areas:

1. ***On-Site PMZ (Main) – The on-site PMZ (Main) will include the cumulative groundwater PCLE Zone within the UPRR-owned property from the center to the east portion of the Site.***
2. ***On-Site PMZ (West) – The on-site PMZ (West) will include the B-CZ/B-TZ PCLE Zone on the west side of the Site within the UPRR-owned property.***
3. ***Off-Site PMZ – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site, but not including land designated as City of Houston ROW. The proposed off-site PMZ will require institutional controls for up to 88 individual properties.***
4. ***Off-Site PMZ City of Houston ROW – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site within the land designated as City of Houston ROW.***

The On-Site PMZs (Main and West, including the former HWPW, Englewood Intermodal Yard) will be deed restricted to commercial-industrial land use and to restrict future use of groundwater on-site, as well as restrictions on soil excavation activities within the surface soil PCLE Zone on the UPRR-owned property. The Off-Site PMZ City of Houston ROW will be deed restricted to restrict future use of groundwater on-site, as well as restrictions on soil excavation activities within the surface soil PCLE Zone along a portion of the northern boundary of the Site. For the Off-Site PMZ, UPRR has acquired the necessary landowner consent on 52 of the 88 properties to establish the PMZ on properties not owned by UPRR.

To address the NAPL present in the GWBUs, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be addressed through control via TI. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells, the TI demonstration details the difficulty of achieving groundwater PCLs within a reasonable timeframe in these areas because of complex hydrogeology and physical nature of creosote (discussed in Worksheet 2.3 of the RAP (CP Attachment XI.D)). The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include physical (recover readily recoverable creosote DNAPL from wells with DNAPL present) or natural means (natural source-zone depletion (NSZD)) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met. UPRR is currently conducting monthly DNAPL Recovery Activities to evaluate the recoverability of the DNAPL at the Site. The DNAPL recovery consists of monthly pumping events from wells with sufficient volumes of DNAPL that can be recovered. DNAPL recovery will continue on a monthly basis, but the recovery frequency and wells included in the DNAPL Recovery Activities will be evaluated on an annual basis for DNAPL recoverability and effectiveness.

Institutional controls as detailed in §350.31(g) through deed recordation (UPRR-owned property) and restrictive covenants (off-site properties) within the PMZ and TI Zone and restricting the use of groundwater will be used at the Site to prevent future exposure risk until groundwater concentrations achieve critical PCLs. Landowners for some properties within the Off-Site PMZ were not locatable. In accordance with 30 TAC §350.111(c)(3), documentation of the extensive and diligent inquiry to locate those landowners are provided in Appendix 5 of the RAP (CP Attachment XI.D). Following approval from the TCEQ Executive Director, deed notices on those properties will be placed detailing the Off-Site PMZ.

3. Groundwater Monitoring and Corrective Action Program Description

a. Describe the proposed groundwater monitoring system to be used to monitor corrective action and compliance with the GWPS which includes the following information.

(1) Changes, if applicable, from the current groundwater monitoring program at the waste management unit that will be required to comply with the corrective action monitoring program described in 30 TAC 335.166. This description should address changes concerning:

(a) Geological and/or hydrogeological information differences since the submittal of the previous application [must submit a Geologic and Hydrogeologic Report in accordance with Section XI.A.4;

See Permit Section VI. Geology Report and CP Attachment XI.D – Response Action Plan – Attachment 1A for additional geologic and hydrogeologic information since previous permit application.

(b) Waste management areas/units;

The regulated unit SWMU 1, which was previously monitored under the Corrective Action Program, will be monitored under the Detection Monitoring Program (Part B Section VI.B.3). For the other SWMUs and AOCs, groundwater monitoring and corrective action program was designed for the facility-wide corrective action as detailed in the RAP (CP Attachment XI.D).

(c) Construction details for monitor wells to evaluate compliance with "Attachment B" well specification requirements;

See RAP, Worksheet 3.1, Attachment 3A – Table 1 (CP Attachment XI.D) for list of alternate point of exposure (APOE) wells and attenuation monitoring points (AMP) wells to be incorporated into the Corrective Action Monitoring through the Plume Management Zone (PMZ). Some of the wells listed in the RAP, Worksheet 3.1, Attachment 3A – Table 1 (CP Attachment XI.D) pre-date the well specification requirements or were RFI investigation wells and may not be in compliance with Attachment B of Section XI. Well completion logs for the POE and AMP wells are provided in Section VI, Appendix VI.B. Any wells constructed after issuance of the Compliance Plan will meet the requirements of the CP Attachment B, unless an alternate well design is approved by the Executive Director.

(d) The number and locations of additional monitor wells [must submit the Monitoring System Plan/Report required by Section XI.D.3.c.(2);

See RAP, Worksheet 3.1, Attachment 3A – Table 2 (CP Attachment XI.D) for the list of additional monitoring wells (i.e., Corrective Action Observation Wells) for the

facility.

(e) Sample handling, chain of custody, and analytical procedures (also see "Attachment C");

See CP Attachment XI.C (Sampling and Analysis Plan).

(f) Frequency of monitoring;

The APOE and AMP wells will be monitored semiannually. UPRR will evaluate the sampling frequency annually as part of the Annual Groundwater Monitoring Reporting.

(g) Monitoring parameters;

The parameters listed in Compliance Plan Tables IIIA (Table of Indicator Parameters and the Groundwater Protection Standard) will be monitored. As indicated on CP Table III, selected monitoring wells will also be evaluated for vinyl chloride based on sampling results from the Affected Property Assessment Report (APAR). The source of the vinyl chloride is not from a degradation of a parent chlorinated hydrocarbon, but rather it is likely from a contaminant in a creosote extender used in the late 1970s based on historical records for the Site. .

(h) Evaluation of compliance with GWPS (statistical methods);

Evaluation of compliance with GWPS or other ACLs will include assessing the groundwater monitoring data from two sets of wells: Alternate Point of Exposure (APOE) wells and Attenuation Monitoring Points (AMPS). With the Plume Management Zones (PMZs), TRRP requirements in 30 TAC §350.33(f)(4)(D) specify that: "The person shall establish groundwater attenuation monitoring points beginning at an appropriate hydraulically upgradient location within the groundwater PCLE zone and continuing down the approximate central flow path of the COCs to the downgradient extent of the PMZ." Attenuation Action Levels (AALs) have been established for AMPs within the A-TZ, B-CZ-B-TZ, and C-TZ PMZs in order for the critical groundwater PCLs to not be exceeded at the APOE wells, as specified in 30 TAC §350.33(f)(4)(D)(ii). Details on AAL development are provided in Attachment 2E of Section XI, CP Attachment D, Response Action Plan (RAP)).

Since some natural attenuation of COCs have been observed at the Site (as indicated by the stable/declining concentration trends discussed in CP Attachment D) and future natural attenuation of these COCs is anticipated, proposed AALs were developed based on the procedures described in Section 3.2.1 of TRRP-33 Guidance. Specifically, the "Method One" approach (a graphical technique based on empirical data from previous monitoring events) provided in that guidance document was used. This approach involves plotting COC concentrations against distance from the COC source to the groundwater POE using existing monitoring data. A first-order curve is then fitted from a point near the source area (after accounting for natural variability) to the POE. The concentrations represented by this line at the identified AMPs are calculated as AALs. As noted in TRRP-33: "The data used to develop the curves should be selected so that the method accounts for routine variations in the data due to seasonal effects or sampling variability, such as by: 1) using the

upper range of historical data to construct the AAL first order line; or 2) accounting for some level of exceedances; or 3) using a moving average over the long-term monitoring data in each well; or 4) some other method."

In a typical evaluation, as described in TRRP-33, AALs are then selected from the AAL line to correspond to the distance that the AMP is located from the source (or in regards to the HWPW where DNAPL is present). The natural logarithm (Ln) of the y-coordinate at each of these points is then calculated to establish the AAL at each AMP. The calculated AALs for each GWBU and each primary COC (benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene) are shown on the following:

- ***A-TZ – CP Attachment D, RAP Attachments 2E-1 thorough 2E-5;***
- ***B-CZ – CP Attachment D, RAP Attachments 2E-6 thorough 2E-10; and***
- ***C-TZ – CP Attachment D, RAP Attachments 2E-11 thorough 2E-15.***

Groundwater data will then be either directly compared to the GWPS listed on CP Table IIIA or using statistical procedures, as discussed below:

- ***Directly compare the value of each constituent to the respective concentration limit of CP Table IIIA and determine if it is less than, equal to, or greater than the listed value (either the GWPS for the APOE wells or the AAL for the AMPs). If the values for all the constituents are less than or equal to the respective concentration limits of CP Table IIIA (or CP Attachment D, RAP, Attachment 2E), then the well shall be considered compliant with the GWPS or AAL for the sampling event. If one or more constituent value once verified is greater than the respective concentration limit, then the well will be considered non-compliant with the GWPS for the sampling event. However, it is important to note that this method is susceptible to a high rate of false positives***

- ***Statistical approach using the Confidence Interval Procedure for the mean concentration based on a normal, log-normal, or non-parametric distribution. The 95 percent confidence coefficient of the t-distribution will be used in constructing the confidence interval (Chapter 21 of Statistical Analysis of Groundwater Data at RCRA Facilities-Unified Guidance, U.S. EPA, March 2009), and subsequent updates acceptable to the Executive Director. The confidence interval upper limit (UCL) for each constituent will be compared with the corresponding concentration limit in CP Table IIIA. To be considered in compliance, the confidence interval upper limit for a well in question must not exceed the tabled concentration limit depending on the objective of the well (i.e., APOE compared to AMP). A verified confidence interval upper limit above the tabled concentration limit shall be considered as evidence of statistically significant contamination and the well will be considered non-compliant with the GWPS for the sampling event.***

- ***As part of the evaluation of compliance with the GWPS, a verification resampling procedure will also be employed at the facility whenever an unverified, initial exceedance is detected either through direct comparison or through statistics. The verification resampling will follow a "pass 1 of 2" resamples to verify an initial exceedance of the GWPS.***

- ***Groundwater data will also be evaluated using trend analysis. See RAP, Appendix 7 Statistical Methodology regarding trend analysis (CP Attachment XI.D).***

(i) Other Sampling and Analysis Plan information to be in compliant with "Attachment C";

See CP Attachment XI.C (Sampling and Analysis Plan).

(j) Compliance period as defined in Section XI.E.1.c. of the application;

See Section XI.E.1.c.

(k) Financial assurance; and

See Section XI.E (Cost Estimates for Financial Assurance).

(l) An ACL variance under 30 TAC 335.160(b), if applicable (also see "Attachment A").

See Section XI Attachment A (Alternate Concentration Levels).

(2) The number, depth and location of all monitor wells (Background Wells, Point of Compliance Wells, Corrective Action Observation Wells, Supplemental Wells, piezometers, etc.) and all Recovery Wells and complete CP Table V – Designation of Wells by Function. Also, make revisions as applicable to plans referenced in Section XI.D.3.c.

See the following tables for monitoring wells at the facility to be incorporated into the Corrective Action Monitoring Program:

- ***RAP, Worksheet 3.1, Attachment 3A – Table 1 (CP Attachment XI.D) for the list of PMZ Monitoring Well Network (i.e., APOE and AMP Wells).***
- ***RAP, Worksheet 3.1, Attachment 3A – Table 2 (CP Attachment XI.D) for the list of additional monitoring wells (i.e., Corrective Action Observation Wells).***
- ***RAP, Worksheet 3.1, Attachment 3A – Table 3 (CP Attachment XI.D) for the list of additional DNAPL recovery wells (i.e., Corrective Action System Wells).***

See Compliance Plan Table V (Designation of Wells by Function) and associated sheets.

(3) The proposed hazardous constituent monitoring list which is based on constituents that were monitored during detection monitoring (if applicable), constituents detected in accordance with 30 TAC 335.164, and degradational constituents identified in CP Table III accordingly to develop the constituent list for the Corrective Action Monitoring Program. CP Table III shall become part of the final Compliance Plan.

See Compliance Plan Table III (Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard).

(4) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table III complete CP Table IIIA – Corrective Action Program Table of Indicator Parameters and the Groundwater Protection Standard, accordingly. CP Table IIIA shall become part of the Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.166(7).

See Compliance Plan Table IIIA (Table of Indicator Parameters and the Groundwater Protection Standard).

(5) Monitoring frequency.

The parameters listed in Compliance Plan Table IIIA (Table of Indicator Parameters and the Groundwater Protection Standard) will be monitored semiannually.

(6) Provisions for semiannual reporting of groundwater data.

As detailed in the RAP (CP Attachment XI.D), the parameters listed in Compliance Plan Tables III (Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) or Table IIIA (Table of Indicator Parameters and the Groundwater Protection Standard) will be reported annually in the Annual Groundwater Corrective Action Monitoring Report (details provided in the RAP, Worksheet 6.0 of the CP Attachment XI.D.

(7) Annual determination of contamination plume rate and direction of migration.

As will be presented in the Annual Groundwater Corrective Action Monitoring Report, contaminant plume rate and direction of migration will be determined at a minimum annually and will be discussed in the annual reports for groundwater data.

(8) Compliance period. Calculate the compliance period as required by 30 TAC 335.162 and 335.165(1)(d). Include calculations and complete CP Table VI – Compliance Period for RCRA-Regulated Units which shall become part of the final Compliance Plan.

The only Regulated Unit, SWMU 1, has achieved Remedy Standard A RAOs and was issued a No Further Action letter from the TCEQ for corrective action. SWMU 1 will be monitored under the Compliance Monitoring Program.

b. Proposed methods of evaluating the effectiveness of the corrective action in the saturated and vadose zone.

The effectiveness of the corrective action in the saturated zone will ultimately be evaluated by compliance with the TRRP-based GWPS at the alternate POE wells as part of the "no growth" PMZ and TI Zone. The GWPS and PCLs are listed in Compliance Plan Tables III (Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) or Table IIIA (Table of Indicator Parameters and the Groundwater Protection Standard).

c. Submit the following plans and reports.

(1) Current Sampling and Analysis Plan - The Sampling and Analysis Plan must include information required by 30 TAC 335.163(4) and 335.163(5) and 40 CFR Subpart 270.30(j). For guidance, please see "Attachment C" to the application.

See CP Attachment XI.C (Sampling and Analysis Plan).

(2) Groundwater Recovery and Monitoring System Plan - At a minimum, the plan must include:

(a) Recovery System Plan - The applicant should propose a recovery system design that will achieve the performance requirement to protect human health and the environment. The plan should provide detailed plans, information and specifications on the recovery system's design and well installation specifications. All new recovery wells must be installed in accordance with applicable specifications outlined in "Attachment B", unless an alternative well design is approved by the agency prior to installation of the well. The Recovery System Plan must include Recovery System Design and Specifications - Certified by a Texas Registered Professional Engineer. The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.;

Not Applicable

(b) Monitoring System Plan - If the applicant is proposing a monitoring well or a monitoring system in the application, the applicable well installation specifications outlined in "Attachment B" of this application should be followed. All new monitoring wells must be installed in accordance with the specifications outlined in "Attachment B", unless an alternative design is approved by the agency prior to installation. If the applicant proposes as part of the monitoring system, any well (existing or proposed) that does not meet or exceed the requirements outlined in "Attachment B", then the proposed alternative design must be described in detail in the Monitoring System Plan and must be submitted with this application. The Monitoring System Plan must include:

i. Monitoring System Design and Specifications - Certified by a qualified engineer and/or geologist which provides detailed plans and specifications on the monitoring system design; and
ii. Well Drilling and Well Casing Specifications - Certified by a qualified engineer and/or geologist which provides details on well casing specification, drilling logs and reports.

See CP Attachment XI.B (Well Design and Construction Specifications). No alternative designs are proposed as part of this application.

(3) Current Geologic and Hydrogeologic Report - Provide a report per Section XI.A.4 of this application discussing the geologic and hydrogeologic conditions of the facility and the specific area affected by the waste management areas. This report should include the most up-to-date information from which the design of the groundwater monitoring system was based.

See CP Attachment XI.D – Response Action Plan – Attachment 1A for up-to-date geologic and hydrogeologic information used to develop the groundwater monitoring system.

4. Waste Management Units/Areas Monitored Under Corrective Action Programs

a. Delineate and identify the following for each waste management unit/area in the proposed groundwater monitoring and corrective action programs.

(1) Boundary of the waste management unit and, if applicable, the proposed waste management area which includes more than one waste management unit (identify all waste

management units which are included in the waste management area). These waste management units/areas subject to corrective action pursuant to 30 TAC 335.166 and 335.167 should be listed in CP Table I – Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring. CP Table I shall become part of the final Compliance Plan.

The corrective action program covers a facility-wide approach with the soil Affected Property or the PCLE zone defining the Area of Contamination and the PCLE Zones defining the areas subject to corrective actions. See CP Attachment A, Sheet 1 of 5, Figures XI.A.2.1, XI.A.2.2, and XI.A.2.3 for maps showing the SWMUs and AOCs under the Corrective Action Program.

(2) The proposed point of compliance (30 TAC 335.161), point of exposure wells, or alternate point of exposure wells.

As part of the facility-wide corrective action program that incorporates the Plume Management Zone (PMZ) for the GWBUs, see Section XI.D.6 and Compliance Plan Table V (Designation of Wells by Function) and associated sheets for the list of APOE wells.

(3) Any proposed monitor wells such as supplemental wells, observation wells, background wells, etc. If appropriate the groundwater monitoring system should have a sufficient number of wells to monitor the downgradient extent of the plume.

See the following tables for monitoring wells at the facility to be incorporated into the Corrective Action Monitoring Program as part of the PMZ (see Section XI.D.6):

- ***RAP, Worksheet 3.1, Attachment 3A – Table 2 (CP Attachment XI.D) for the list of additional monitoring wells (i.e., Corrective Action Observation Wells).***
- ***RAP, Worksheet 3.1, Attachment 3A – Table 3 (CP Attachment XI.D) for the list of additional DNAPL recovery wells (i.e., Corrective Action System Wells).***

(4) Features which may serve as conduits for subsurface contamination.

As discussed in the RAP, Worksheet 2.1 (A-TZ) (see CP Attachment XI.D), an on-site field survey and water-well data search was conducted, indicating no potential water wells were located that could act as a conduit for migration of shallow groundwater into the underlying groundwater formation. However, as discussed in the APAR Addendum (PBW, 2009), two sets of fiber optic lines, Level 3 Communications and Qwest, run along the north side of the rail main lines across the entire length of the Site (Attachment 1A, Figure 5A-1). Based on conversations with both Level 3 Communications and Qwest representatives, the fiber lines run underneath SWMUs 2, 5, 4, 8, and 10/11. The fiber lines run directly underneath the drainage ditch southwest of the Site and under the southern drainage ditch (SDD) about 3 to 5 feet bgs. The Level 3 Communications line reportedly was directionally bored to a depth of 40 to 45 feet bgs underneath the Original and Recent Process Areas (SWMU Nos. 5 and 4, respectively) and under the aboveground storage tank (AST) Area (SWMU No. 8). The Qwest fiber line reportedly runs 10 to 15 feet northwest and parallel of the main rail line, and is about 5 to 10 feet bgs through the Site. Just east of SWMU No. 8, the both fiber lines return to approximately 4 to 6 feet below grade an continue running northeast parallel to the rail main line. The Level 3 Communications line may act as an artificial penetration since the reported depths of the line go through both the A-TZ and into the B-CZ immediately below the primary source areas. Given the depth of the fiber optic line is below the A-TZ and

likely below the B-TZ (or carbonate seams within the B-CZ), monitoring well MW-19C will continue to be monitored as a Corrective Action Observation Well to evaluate if the directional bored fiber optic lines are creating a preferential pathway for COCs to migrate to the C-TZ GWBU.

In addition to the fiber lines, three City of Houston utilities were identified in the previous APAR (PBW, 2009) that cut across the Site oriented north-south just west of the Lockwood Street Bridge: 1) 60-in wastewater line, 2) 84-in water line, and 3) a 42-in storm sewer line (PBW, 2009). Through a review of the utility drawing files obtained from the City of Houston Public Works Survey Department, two of the underground utility lines (the 60-in sanitary sewer line and the 84-in water line) appear to be at depths that potentially intersect the uppermost GWBU A-TZ. The estimated depths of the utilities based on the city drawings are shown on the Geologic Cross Sections A-A', B-B', and C-C' (CP Attachment XI.D, RAP, Attachment 1A, Figure 4C-1). The estimated base depth of the 60-in wastewater line and the 84-in water line where Cross Section B-B' crosses the utility lines is approximately 23 feet bgs (approximate elevation of 26 feet HVD). It is highly unlikely that A-TZ groundwater is seeping into the 84-in water line, given the line is under pressure (flow is south to north), constructed with welded steel pipe, and is relatively new (constructed in 2000). Sampling of the 60-in sanitary sewer line was conducted in 2010. Of the three samples collected in 2010, the only sample with concentrations greater than PCLs was the upgradient sample SSW1 that had a detection of bis(2-ethylhexl)phthalate (0.0092 mg/L) above the $^{GW}GW_{ing}$ PCL of 0.006 mg/L; however, bis(2-ethylhexyl)phthalate is a common laboratory contaminant (as cited in 30 TAC§350.71(k)(2)(B)). The sanitary sewer sample analytical results suggest that there is not a significant mass loading of COCs from groundwater into the sanitary sewer.

(5) Corrective action system.

See RAP, Worksheet 2.0 (CP Attachment XI.D). UPRR will continue monthly DNAPL recovery activities from the wells where DNAPL has been detected and recovered (see RAP, Worksheet 3.1, Attachment 3A – Table 3 (CP Attachment XI.D) for the list of DNAPL recovery wells (i.e., Corrective Action System Wells)). The results from the 24-month DNAPL recovery pilot test completed in January 2015 (PBW, 2015) indicated the following:

- ***Once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested.***
- ***The current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time.***

b. For each waste management unit/area in the proposed groundwater monitoring system, submit the locations of individual waste management unit/area monitor wells (existing or proposed) and any soil borings (plugged and unplugged) specifically drilled for assessment of contamination. These individual monitor wells shall be identified by respective well number on a plan view drawing and only the background, point of compliance, point of exposure wells and/or alternate point of exposure wells should be indicated in CP Table V – Designation of Wells by Function. The plan view map depicting the location of individual monitoring wells for corrective action monitoring should be labeled as "CP Attachment A, sheet xx of xx" in the text box. The title box should also include reference to the facility name, Permit/Compliance Plan Number, Solid Waste Registration Number, Unit Description or name with Notice of Registration (NoR) Unit No. 0000. The "CP Attachment A" map(s) and CP Table V shall also become part of the final Permit/Compliance Plan.

The following maps show the monitoring wells proposed as part of the Corrective Action Monitoring Program for the facility-wide approach using PMZs:

- ***CP Attachment A, Sheet 3 of 5 – PMZ Boundary Map, A-TZ***
- ***CP Attachment A, Sheet 4 of 5 – PMZ Boundary Map, B-CZ/B-TZ***
- ***CP Attachment A, Sheet 5 of 5 – PMZ Boundary Map, C-TZ***

See Compliance Plan Table V (Designation of Wells by Function) and associated sheets.

5. Waste Management Units/Areas Addressed Under Other Corrective Action Programs -Facility Operations Area (FOA), specific to the requirements of 30 TAC 350.131 - 350.135. The Permittee should also complete Sections XI.D.4. for other units not addressed by the FOA that may require corrective action outside the FOA boundary. For other units not addressed by the FOA, either within the FOA or outside the FOA which may require compliance monitoring, the Permittee should complete Section XI.C. of this application accordingly.

Not Applicable

a. Provide an approved version of the FOA Qualifying Criteria Checklist and evidence that Steps 1 through 3 of the FOA pre-approval process has been approved by the Commission.
b. Provide a discussion on exceptions to the TRRP rule requested.
c. Provide a summary of the SWMUs/AOCs that will be addressed within the FOA boundary and a discussion of the multiple sources of COCs present and how FOA will better address these sources.
d. Provide maps of appropriate scale depicting the following (maps may be combined where appropriate):
   (1) The number, location and type of monitoring points in each stratigraphic unit to be monitored individual monitoring wells should be identified by respective well number on a plan view drawing, to include the background, Point of Compliance (POC), Point of Exposure (POE), FOA Boundary of Compliance wells, FOA piezometers or supplemental wells, Corrective Action Observation ((CAO), Corrective Action System (CAS) wells that are applicable for FOA monitoring program should be labeled as "CP Attachment A, sheet no xx of xx" in the title box. The title box should also include reference to the facility name, Permit/Compliance Plan Number (00000), TCEQ Solid Waste Registration Number and Unit Description or Name. The "CP Attachment A" map(s) shall become part of the final Permit/Compliance Plan.

   (2) HWMUs/SWMUs/AOCs addressed
   (3) Surrounding land use
   (4) FOA lateral boundaries
   (5) Potential source areas
   (6) Potentiometric surface of all relevant transmissive units
   (7) Surrounding water wells
   (8) Extent of known contamination in each transmissive unit
   (9) Areas of potential ecological impact
   (10) Known occurrences of NAPL or DNAPL in each transmissive units
   (11) FOA access control components

e. Provide cross-sections in accordance with Section XI.A.4. depicting the following (maps may be combined where appropriate);
   (1) The vertical boundaries of the FOA;
   (2) The vertical extent of contamination;
   (3) Groundwater level elevations for each transmissive unit.

f. Provide tabulated information for;
   (1) Results of Appendix IX GW sampling.
   (2) Proposed PCLs for each hazardous constituent and principal degradational constituent for each monitoring point with supporting documentation (including a discussion of exposure pathways) should be listed in CP Table III – CORRECTIVE ACTION PROGRAM Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard. CP Table III shall become part of the final Compliance Plan.
   (3) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table IIIA. CP Table IIIA shall become part of the Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.166(7).
   (4) Only the background, POC, POE, FOA Boundary of Compliance wells should be listed in CP Table V which shall become part of the final Permit/Compliance Plan.

g. Provide a discussion of the types of corrective action that will be employed to address contaminated media.

h. Provide detailed descriptions of GW recovery and other remedial technologies such as vapor extraction, interceptor trenches, hydraulic containment, barrier walls, etc., including radius of influence, estimated optimum recovery rates, location of collection, storage or disposal facilities.

i. Provide a detailed description of the ground water monitoring system including placement of monitoring wells, hydrogeologic characteristics of monitored units and well completion details.

j. Provide a Sampling and Analysis plan for the proposed FOA that includes development of COCs to be monitored, sampling methodology, sample handling procedures, sampling frequency and statistical procedures for evaluating analytical results (Appendix C).

k. Propose a methodology for evaluating the effectiveness of remedial measures and potential remedial system enhancements.

l. Propose a reporting schedule to provide updated information on the installation and operation of remedial and monitoring systems.

m. Provide Financial Assurance in accordance with Section XI.E.

n. Provide draft language intended to comply with the deed notification requirements of 30 TAC 350.111 and 350.135(a)(11).

o. Provide a summary of the approved workers protection plan.

p. Provide a discussion of areas of ecological impact, if any, and development of associated Protective Concentration Limits (PCLs).

q. Provide a discussion of how NAPL occurrences, if any, will be addressed inside and outside the FOA.

r. Provide a schedule of implementation for items not completed at the time of application See also Section XI.D.8.

6. <u>Waste Management Units/Areas Monitored Under Corrective Action Programs - Plume Management Zone (PMZ)</u>

   a. Please provide a summary of the HWMUs and SWMUs/AOCs that will be addressed within the PMZ boundary.

   See RAP in CP Attachment XI.D, and see response to XI.6.b below.

   b. Please provide a discussion of the multiple sources of COCs present and how PMZ will better address these sources.

See RAP in CP Attachment XI.D. The Site has been used for creosoting operations since 1899 with numerous operations at the Site over that time period. Historical material and waste handling practices have resulted in releases to soil and groundwater. These releases have resulted in commingled creosote-derived COC PCLE zones and creosote non-aqueous phase liquid (NAPL) that are not attributable to specific waste management units or areas of concern. In order to effectively manage the corrective action process at the UPRR HWPW Facility, a comprehensive site-wide approach to corrective action is proposed. The cumulative PMZ will include all or portions of the SWMUs and AOCs, except for AOC 4 and 6. Portions of AOC 4 and 6 will be closed and No Further Action requested following soil excavation (under the Area of Contamination approach). No groundwater impacts were noted for the shallow groundwater near AOC 6.

c. Please provide maps of appropriate scale depicting the following (maps may be combined where appropriate);
(1) HWMUs/SWMUs/AOCs addressed

See Figures XI.A.2, XI.A.2.1, XI.A.2.2, and XI.A.2.3 – Locations of Former Waste Management Units and SWMUs/AOCs Under Corrective Action..

(2) surrounding land use

See Figure XI.A.1a - Facility Site Map.

(3) PMZ lateral boundaries

See the following maps for PMZ lateral boundaries proposed as part of the Corrective Action Monitoring Program for the facility-wide approach:

- ***CP Attachment A, Sheet 3 of 5 – PMZ Boundary Map, A-TZ***
- ***CP Attachment A, Sheet 4 of 5 – PMZ Boundary Map, B-CZ/B-TZ***
- ***CP Attachment A, Sheet 5 of 5 – PMZ Boundary Map, C-TZ***

(4) potential source areas

See RAP in CP Attachment XI.D, Attachment 1A (Figure 1A) and Figure XI.A.2.

(5) Potentiometric surface of all relevant transmissive units

See RAP in CP Attachment XI.D, Attachment 1A (Figures 5A-1 through 5A-4)), and Permit Section VI. Geology Report – Figures VI.J.1 through VI.J.4.

(6) Surrounding water wells

See Permit Section VI. Geology Report – Figure VI.H

(7) extent of known contamination in each transmissive unit

See RAP in CP Attachment XI.D, Attachment 1A (Figures 5B-1 through 5B-22))

(8) number, location and type of monitoring points in each stratigraphic unit to be monitored

See RAP in CP Attachment XI.D, Worksheet 3.0 and Attachment 3A, Tables 1, 2, and 3

(9) Areas of potential ecological impact

None, no potential ecological impacts as discussed in the APAR (PBW, 2009).

(10) known occurrences of LNAPL or DNAPL in each transmissive unit

See RAP in CP Attachment XI.D, Attachment 1A (Figures 5A-5 through 5A-7))

d. Please provide sufficient cross-sections depicting the following (maps may be combined where appropriate);
   (1) The vertical boundaries of the PMZ;
   (2) The vertical extent of contamination;
   (3) potentiometric surfaces for each transmissive unit.

See RAP in CP Attachment XI.D, Attachment 1A (Figures 4C-1 through 4C-5)), and Permit Section VI. Geology Report – Figures VI.E.1 through VI.E.5.

e. Please provide tabulated information for;
   (1) history of all relevant units or AOCs;

See CP Table XI.A.1. – Facility History for Waste Management Units.

(2) summary of hydrogeologic data for each affected transmissive unit;

See RAP in CP Attachment XI.D, Attachment 1A and Permit Section VI. Geology Report

(3) results of Appendix IX GW sampling;

Appendix IX Groundwater sampling results are not available. The list of potential contaminants of concern was established in the RCRA Facility Investigation (RFI) Work Plan dated October 1994. The list of chemicals of concern (COCs) for the Site were developed by reviewing current and historical process operations, a list of standard chemicals associated with creosote operations, and groundwater monitoring results.

(4) proposed PCLs for each constituent for each monitoring point (Point of Exposure wells, alternate point of exposure wells, etc) with supporting documentation (including a discussion of exposure pathways). This should also include the designation/establishment of sufficient number of Attenuation Monitoring Points (AMPs) beginning at an appropriate hydraulically upgradient location within the groundwater protective concentration level exceedence (PLCE) zone and continuing down the approximate central flow path of the constituent of concern (COC) in the downgradient extent of the Plume Management Zone(s) in accordance with 30 TAC 350.33(f)(4)(D).

Details of the proposed PCLs and attenuation action levels (AALs) for the AMPs are provided in the RAP (CP Attachment XI.D). Also see Compliance Plan Table III (Table of Detection Hazardous and Solid Waste Constituents and the Groundwater Protection Standard) for list of PCLs for the alternate POE wells. See Compliance Plan Table IIIA (Corrective Action Program Table of Indicator Parameters and Groundwater Protection Standard) and associated footnotes.

(5) Establish/Calculate Attenuation Action Levels (AALs) (critical PCLs) for each attenuation monitoring point in accordance with 30 TAC 350.33(f)(4)(D)(ii). The established AALs (critical PCLs) for each AMP well should be graphically presented in table format on the plan view map depicting the location of individual monitoring wells (including AMP wells) for corrective action monitoring labeled "CP Attachment A, Sheet xx of xx", referenced in XI.D.4.b.

Details of the proposed AALs for the AMPs are provided in the RAP (CP Attachment XI.D). See the following maps for AMPs proposed as part of the PMZ and Corrective Action Monitoring Program for the facility-wide approach:

- ***CP Attachment A, Sheet 4 of 6 – PMZ Boundary Map, A-TZ***
- ***CP Attachment A, Sheet 5 of 6 – PMZ Boundary Map, B-CZ/B-TZ***
- ***CP Attachment A, Sheet 6 of 6 – PMZ Boundary Map, C-TZ***

f. Please provide a discussion of the types of corrective action that will be employed to address contaminated media.

See RAP in CP Attachment XI.D, Executive Summary:

The objective of the RAP is to develop responses to protect current and future pathways from exposure to the PCLE Zones in surface soil, subsurface soil, and groundwater. The following response actions are proposed at the Site to achieve this objective:

- ***Surface/subsurface soil – The surface/subsurface soil PCLE Zones at the Site will be addressed as follows:***
  1. ***<u>Former HWPW Area</u>: Remedy Standard B closure through consolidating impacted soils within the Area of Contamination (AOC) and implementing Physical Control through an engineered soil cap and asphalt roadway. Periodic inspections and maintenance of the cap and roadway will be implemented;***
  2. ***<u>Englewood Intermodal Yard</u>: Remedy Standard B closure by implementing Physical Control using the existing concrete pavement as a cap. Periodic inspections and maintenance of the cap will be implemented;***
  3. ***<u>Railroad mainlines and siding tracks</u>: The response action for the operational area between the Former HWPW area and the Englewood Intermodal Yard will be Remedy Standard B closure using the existing railroad ballast as a protective barrier; and***
  4. ***<u>City of Houston ROW along Liberty Road</u>: Remedy Standard B closure through limited excavation of surface soils, consolidating impacted soils within the AOC, and implementing Physical Control through an engineered concrete sidewalk. Periodic inspections and maintenance of the cap and roadway will be implemented.***

- ***Groundwater – Remedy Standard B closure using a Plume Management Zone (PMZ) with monitored natural attenuation (MNA) for control as the response action for the groundwater PCLE Zones within the Affected Property. For the purposes of this RAP submittal, there will be four PMZ areas:***
  1. ***On-Site PMZ (Main) - The on-site PMZ (Main) will include the cumulative groundwater PCLE Zone within the UPRR-owned property from the center to the east portion of the Site.***
  2. ***On-Site PMZ (West) - The on-site PMZ (West) will include the B-CZ/B-TZ PCLE Zone on the west side of the Site within the UPRR-owned property.***

3. ***Off-Site PMZ - The off-site PMZ includes the cumulative groundwater PCLE Zone that extends off-site to the north of the Site, but not including City of Houston ROW. The proposed off-site PMZ will require institutional controls for up to 88 individual properties.***
4. ***Off-Site PMZ City of Houston ROW - The off-site PMZ includes the cumulative groundwater PCLE Zone that extends off-site to the north of the Site within the City of Houston ROW.***

In addition, areas where DNAPL was noted will be proposed for control under a Technical Impracticability (TI) Demonstration per 30 TAC §350.33(f). Groundwater monitoring is proposed to be performed as part of the PMZ to confirm that the lateral extent of COC concentrations greater than their respective cPCLs continue to remain within the boundaries of the PMZ. Groundwater monitoring will be initiated for both the on-site PMZ and off-site PMZ following approval of the RAP. During the acquisition of landowner consent for the off-site PMZ, groundwater monitoring will be conducted concurrently with the on-site PMZ monitoring requirements. DNAPL will be recovered from monitoring wells on a periodic basis through pumping to recover the readily recoverable NAPL for the GWBUs to satisfy requirements of the "no growth" PMZ and TI Zone.

g. Please provide detailed descriptions of GW recovery and other remedial technologies such as vapor extraction, interceptor trenches, hydraulic containment, barrier walls, etc., including radius of influence, estimated optimum recovery rates, location of collection, storage or disposal facilities.

As discussed in the RAP, Worksheet 2.0 (CP Attachment XI.D), UPRR initiated a 24-month pilot study in February 2013 through January 2015 to evaluate DNAPL recovery at the Site by conducting tests on selected wells where DNAPL had been observed. Details of the scope of work for the pilot test were submitted to the TCEQ in a letter dated February 5, 2013 (PBW, 2013). A copy of the scope of work is provided in Appendix 3 of the RAP (CP Attachment XI.D). The pilot test procedures consists of measuring the depth to groundwater surface, the depth to the groundwater/DNAPL interface, and the total depth of the well relative to the top of well casing prior to DNAPL recovery. Using a peristaltic or diaphragm pump, DNAPL is pumped from the bottom of the well until groundwater is returned in the pump discharge. The volume of recovered DNAPL is estimated from each well, and the well is gauged to measure the total depth of the well and depth to residual DNAPL following pumping. Recovered DNAPL is temporarily stored at the Containment Storage Area. PBW submitted to the TCEQ in a letter dated April 9, 2105 the results of the 24-month pilot test. A copy of the letter is also provided in Appendix 3 of the RAP (CP Attachment XI.D). The conclusions from the pilot test included that once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested, and current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time. More frequent DNAPL recovery would not likely be effective at the Site. The report indicated that monthly DNAPL recovery activities following the procedures listed in the pilot test work plan would continue at the Site. DNAPL recoverability, including recovery frequency and wells included in the DNAPL Recovery Activities will be evaluated on an annual basis as part of the post-response action care reporting.

h. Please provide a detailed description of the groundwater monitoring system including placement of monitoring wells, hydrogeologic characteristics of monitored units and well

completion details.

See RAP in CP Attachment XI.D, Worksheet 2.1 and Attachment 3A – Tables 1, 2, and 3.

i. Please provide a Sampling and Analysis plan for the proposed PMZ that includes development of COCs to be monitored, sampling methodology, sample handling procedures, sampling frequency and statistical procedures for evaluating analytical results.

See the Sampling and Analysis Plan (SAP) in CP Attachment XI.C, RAP in CP Attachment XI.D, Worksheet 3.1 and Attachment 3A, and Appendix 7 (Statistical Methodology).

j. Please propose a methodology for evaluating the effectiveness of remedial measures and potential remedial system enhancements.

See RAP in CP Attachment XI.D, Worksheet 3.0:

<u>Surface/Subsurface Soils</u>

The effectiveness of the response action for the impacted soils within the PCLE Zone to be excavated and relocated within the Area of Contamination will be demonstrated by confirmation sampling from the excavation that indicates COC concentrations in remaining soils are below critical PCLs (commercial/industrial $^{Tot}Soil_{Comb}$). During excavation activities, measures will be conducted to ensure migration of impacted soils do not leave the Area of Contamination (Soil Affected Property). These measures will include silt fencing, dust monitoring and control, and adequate storm water protection and management during the construction activities.

Performance measures for the capped areas (soil cap and asphalt roadway) will include routine cap and roadway inspections to ensure that these areas have not been eroded and thereby exposing soils with COC concentrations greater than cPCLs. Vegetation on the cap will be maintained, with the intent of cultivating vegetation attractive to pollinators. Performance measures for the Englewood Intermodal Yard and City of Houston ROW sidewalk will include routine inspections of the concrete sidewalk or pavement to ensure cracks have not developed in the pavement. Cracks will be repaired in the pavement. The railroad ballast area will be maintained as part of normal railroad operations in the area. These operations will include track and tie maintenance, as well as maintenance of the ballast material for the functions of the rail lines. Inspections of the ballast will assess if areas of exposed soil are present within the soil PCLE Zone.

A cap inspection and maintenance program will be conducted to maintain the integrity of the physical controls and to ensure that it continues to meet its performance objectives. See RAP Worksheet 3.2. (CP Attachment XI.D).

<u>Groundwater</u>

Groundwater monitoring will be performed in conjunction with the PMZ (Standard B) response action proposed for the groundwater PCLE zone. Confirmation that the downgradient extent of the PCLE Zone does not expand outside the boundaries of the on-site and off-site PMZs will be provided by comparing concentrations of these COCs to the AALs or exceedance of a cPCL at an alternate POE well as specified in RAP Worksheet 2.1 (CP Attachment XI.D). In the event that a GWPS concentration in an alternate POE well is exceeded in an initial monitoring sample, a second confirmation sample will be collected within 60 days from the monitoring well

where the initial unverified exceedance was observed and analyzed for the specific COC that exceeded its GWPS. If the COC concentration in the second sample is greater than the GWPS, a confirmed exceedance will be concluded and further action will be required, unless an alternate source demonstration can explain the detection. Possible further actions for the Site following a confirmed GWPS exceedance may include modifications to the monitoring frequency or monitoring locations (e.g., installation of additional monitoring locations), re-evaluation of concentration trends in existing monitoring wells, or evaluation of the COC data trends (see CP Attachment XI.D, Appendix 7 for Statistical Methodology). The TCEQ will be promptly notified of any verified exceedances at alternate POE wells.

NAPL Recovery

UPRR will continue monthly DNAPL recovery activities from the wells where DNAPL has been detected and recovered. The results from the 24-month DNAPL recovery pilot test completed in January 2015 (PBW, 2015) indicated the following:

- ***Once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested.***
- ***The current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time.***

Performance measures for DNAPL recovery will be no significant DNAPL thickness increase in the wells pumped (compared to pre-test levels), and no migration of DNAPL to wells that had no previous indication of DNAPL present (in-well observations as well as NAPL noted in the boring log in the GWBU). DNAPL recovery performance and effectiveness will be evaluated annually as part of the post-response action care reporting.

k. Please propose a reporting schedule to provide updated information on the installation and operation of remedial and monitoring systems.

See RAP in CP Attachment XI.D, Worksheet 6.0.

l. Please provide a thorough detailed description of an estimate of all costs that will be incurred by implementing, operating, and maintaining the corrective action and monitoring systems addressed by the compliance plan.

See Section XI.E (Cost Estimates for Financial Assurance).

m. Please provide draft language intended to comply with the deed notification requirements of 350.111, and schedule to verify compliance with institutional control requirements in accordance with 30 TAC 350.31(g) which provides notice of the existence and location of the PMZ and which prevents exposure to groundwater from this zone until such a time as constituents of concern may be reduced to below the GWPS.

See RAP in CP Attachment XI.D Appendix 4.

n. Schedule for notification requirements if an unexpected event occurs, or a condition is detected, during post-response action care period which indicates that additional response actions will be required at an affected property pursuant to 30 TAC 350.33(k).

See RAP in CP Attachment XI.D, Worksheet 6.0.

o. Please provide a summary of the approved soil response action plan.

The proposed soil response action plan has not been approved. Details of the soil response are provided in the RAP (CP Attachment XI.D). However, implementation of the proposed corrective action for surface soils discussed in the RAP will be initiated prior to approval of the RCRA Permit Renewal.

p. Please provide a discussion of areas of ecological impact, if any, and development of associated PCLs.

As discussed in the APAR Addendum (dated July 2009 (PBW, 2009)), no areas of ecological impact were identified, except at AOC 6. To address the human health PCLE zone for surface soils in the area of AOC 6, the proposed response action will be soil removal, which is detailed in the RAP (CP Attachment XI.D). Through this action, the proposed remediation to address human health risk will coincidentally address ecological risk by eliminating the ecological exposure pathways. Therefore, to address the PCLE zone for surface soils in the drainage ditch and AOC 6, no additional ecological risk evaluation will be necessary under the reasoned justification clause (30 TAC §350.77).

q. Please provide a discussion of how NAPL occurrences, if any, will be addressed inside the PMZ.

See RAP in CP Attachment XI.D, Worksheet 2.1:

To address the NAPL in the PMZs and TI Zone for the three GWBUs (A-TZ, B-CZ/B-TZ, and C-TZ), the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be achieved through control via TI based on the occurrence of DNAPL in monitoring wells. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells, the TI demonstration (RAP Worksheet 2.3, CP Attachment XI.D) details the difficulty of achieving groundwater PCLs in these areas because of complex hydrogeology and physical nature of creosote. The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include physical (recover readily recoverable creosote DNAPL from monitoring wells with DNAPL present) or natural means (natural source zone depletion (NSZD) through biodegradation) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met, including no GWPS exceedances at the alternate POE wells.

Therefore, since the wells with DNAPL lie within the proposed TI Zones (On-site and Off-Site), the current response objective per the TCEQ Guidance is to ensure compliance of NAPL in the TI Zone through control. Readily recoverable NAPL will be recovered from wells on a monthly basis in order to control potential migration from the TI Zone. In addition, institutional controls on groundwater use will be implemented to protect exposure to residual NAPL in the GWBUs.

r. Please provide a schedule of implementation for items not completed at the time of application {See also Section XI.D.8.}

See RAP in CP Attachment XI.D, Worksheet 6.0 and Section XI.D.8.

7. Waste Management Units/Areas Monitored Under Alternative Corrective Action Program for Co-mingled plumes Alternative groundwater Corrective Action Program apply, pursuant 30 TAC 335.151, 335.156 and 350, for commingled release from RCRA-regulated unit and from one or more SWMUs and/or AOC.

Not Applicable

a. Complete Sections XI.D.1. through 4.;

b. In addition to the CP Attachment A maps in Section XI.D.4.b., CP Attachment A maps should clearly depict those waste management unit or areas of the facility which have commingled plumes and the alternative corrective action applies.

c. Please provide a schedule of implementation for items not completed at the time of application {See also Section XI.D.8.}

8. Implementation Schedule

Itemize and discuss, in detail, the estimated time schedule necessary for any testing and assessments, system design, construction and installation, and final implementation of the groundwater monitoring program for each Regulated Unit and solid waste management unit. If the schedule of implementation for items are not completed at the time of the application, or are not completed at the time of issuance of the final draft Compliance Plan, then the items should be added to the CP Table VIII - (Compliance Schedule) of the application.

See Compliance Plan Table VIII (Compliance Schedule).

E. COST ESTIMATES FOR FINANCIAL ASSURANCE

As required by 30 TAC 335.156 and 335.167, the applicant must provide cost estimates for groundwater monitoring and corrective action to determine the amount of financial assurance. Please complete the applicable parts of this form. Cost estimates should be filled out for each proposed corrective action/monitoring system at the site; or any additional corrective action system not covered in this Part. Please note, the Executive Director may request from the applicant documentary evidence for cost estimates.

If an item is not applicable, please mark it NA.

General Information

1. For each Waste Management Area (WMA) list the following:

   a. A description of the waste management unit(s) in the WMA (e.g., landfill, surface impoundment, land treatment);

   See Compliance Plan Table I Waste Management Units Subject to Groundwater Corrective Action and Compliance Monitoring. However, the Corrective Action will be conducted on a facility-wide approach, not WMA by WMA.

   b. The NoR unit number(s) in the WMA; and

   See Compliance Plan Table I Waste Management Units Subject to Groundwater Corrective Action and Compliance Monitoring

   c. The compliance period for the WMA listed above: Year(s) = 30
   (The compliance period is the number of years equal to the active life of the waste management area as defined in 30 TAC 335.162).

   d. In instances where the compliance period is equal to or exceeds 30 years, the maximum amount of financial assurance required will be based on 30 years because the required post-closure care period to perform corrective action and groundwater monitoring is 30 years. In instances where the compliance period is less than 30 years, the financial assurance for corrective action or compliance monitoring will be based on the longest time frame established by one of the following criteria:
   (1) the duration of your compliance plan;
   (2) the time frame for clean-up based on model projections and historical data as approved by the Executive Director; or
   (3) the compliance period for the unit/area.

   TOTAL YEARS USED TO CALCULATE THE FINANCIAL ASSURANCE FOR THE CORRECTIVE ACTION AND/OR COMPLIANCE MONITORING PROGRAM

   YEAR(S) = 30

2. Please complete Table XI.E.1. – Corrective Action Program Cost Estimate.

3. Please complete Table XI.E.2. – Groundwater Monitoring Cost Estimate.

4. Please complete Table XI.E.3. – Financial Assurance Summary

CP Table I: Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring

A. Corrective Action[1] (30 TAC §335.166)

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
RCRA Regulated - SWMU 1	Closed Surface Impoundment	NOR 001	NFA requested - Corrective Action Monitoring Program will be terminated and NFA approved upon issuance of the December 10, 2014 Permit Renewal per TCEQ Letter dated August 5, 2015.

B. Compliance Monitoring[1] (30 TAC §335.165)

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
RCRA Regulated - SWMU 1	Closed Surface Impoundment	NOR 001	

C. Corrective Action[2] (30 TAC §335.167)

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
SWMU 7 (On-site PMZ)	Tank Car Storage Area	002	
(On-site PMZ)	Sub-surface Tank	003	
(On-site PMZ)	Container Storage Area	004	
(On-site PMZ)	Waste Pile	005	
(On-site PMZ)	Miscellaneous Storage Containers	006	
SWMU 2 (On-site PMZ)	Northern and Southern Drainage Ditches		
SWMU 3 (On-site PMZ)	Oil Drum Storage (ODS) Building		
SWMU 4 (On-site PMZ)	Recent Process Area		
SWMU 5 (On-site PMZ)	Original Process Area		
SWMU 6 (On-site PMZ)	Water Treatment and Boiler System		
SWMU 8 (On-site PMZ)	Aboveground Storage Tank Area		
SWMU 9 (On-site PMZ)	Location of Former UST No. 44-023-05		
SWMU 10 (On-site PMZ)	Location of Former Sap Water Treatment Tank		
SWMU 11 (On-site PMZ)	Oil Water Separators		
SWMU 12 (On-site PMZ)	Railroad Tie Storage Area		
AOC 1 (On-site PMZ)	Diesel Storage Tank		

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
AOC 2 (On-site PMZ)	Hose House		
AOC 3 (On-site PMZ)	Contaminated Portion of City Water Line		
AOC 4 (On-site PMZ)	Location of Former Incinerator		
AOC 5 (On-site PMZ)	City Storm Sewer		
AOC 6 (On-site PMZ)	Inactive Wastewater Lagoon		
AOC 7 (On-site PMZ)	Location of Former UST No. 44-023-21		

D. Alternative Corrective Action[3] (30 TAC §335.151)

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
RESERVED			

E. Facility Operations Area (FOA)[4] (30 TAC §335.156 and Chapter 350)

Unit Type[5]	Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed[5]
RESERVED			

Note: "Reserved" if a specific program (referenced in CP Table I.A., I.B., I.C., I.D., and/or I.E.) is not applicable. More than one program may apply to a facility.

Foot Note:

1. Program applies to RCRA-regulated units only.
2. Program applies to releases from solid waste management units (SWMUs) and/or areas of concern (AOCs).
3. Program applies to commingled releases from RCRA-regulated unit and from one or more SWMUs and/or AOCs.
4. List SWMUs, additional units/areas of Investigation, AOCs, RCRA-regulated units within the FOA that are subject to corrective action. For RCRA units, SWMUs and/ or AOC outside the FOA boundary for which compliance monitoring and/ or corrective action applies should be listed separately in Items A, B or C as appropriate.
5. Specify the date of Commissions No Further Action approval letter for program requirement and remedy standard completed for all media of concern.

CP Table II: Solid Waste Management Units and/or Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167

Unit Number [1]	Unit Name	Notice of Registration (NOR) Number, if applicable	SWMU or AOC	Media Affected[2]	Date Program Requirement and Remedy Standard Completed [3]
1.	Closed Surface Impoundment	001	SWMU 1	None	NFA requested - Corrective Action Monitoring Program will be terminated and NFA approved upon issuance of the December 10, 2014 Permit Renewal.
2.	Tank Car Storage Area	002	SWMU 7	Soil	
3.	Sub-surface Tank	003		None	
4.	Container Storage Area	004		None	
5.	Waste Pile	005		None	
6.	Miscellaneous Storage Containers	006		None	
7.	Northern and Southern Drainage Ditches		SWMU 2	Soil	
8.	Oil Drum Storage (ODS) Building		SWMU 3	None	
9.	Recent Process Area		SWMU 4	Soil	
10.	Original Process Area		SWMU 5	Soil	
11.	Water Treatment and Boiler System		SWMU 6	Soil	
12.	Aboveground Storage Tank Area		SWMU 8	Soil	
13.	Location of Former UST No. 44-023-05		SWMU 9	Soil	
14.	Location of Former Sap Water Treatment Tank		SWMU 10	None	
15.	Oil Water Separators		SWMU 11	None	
16.	Railroad Tie Storage Area		SWMU 12	Soil	
17.	Diesel Storage Tank		AOC 1	Soil	
18.	Hose House		AOC 2	Soil	
19.	Contaminated Portion of City Water Line		AOC 3	Soil	
20.	Location of Former Incinerator		AOC 4	None	
21.	City Storm Sewer		AOC 5	Soil	
22.	Inactive Wastewater Lagoon		AOC 6	Soil	
23.	Location of Former UST No. 44-023-21		AOC 7	Soil	

Foot Note:

SWMU = Solid Waste Management Unit
AOC = Area of Concern

1. For sites with FOA Authorization, list SWMUs and/or AOCs that were not included in the FOA, and are subject to corrective action.
2. Specify affected media groundwater, soils, etc.
3. Specify the date of Commissions No Further Action approval letter for program requirement and remedy standard completed for all media of concern.

CP Table III: Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard

On-Site PMZ (Main and West)

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN C Groundwater Protection Standards (GWPS) at Alternate Point of Exposure (APOE) $^{GW}GW_{Ing}$ (mg/l) (C/I)
On Site – Site Wide PMZ	1,2-Dichloroethane	NE	5.0E-03 MCL/PCL
	Benzene	A-TZ – 1.5 AAL B-CZ/B-TZ – 38.45 AAL C-TZ – 0.13 AAL	5.0E-03 MCL/PCL
	Chlorobenzene	NE	1.0E-01 MCL/PCL
	Ethylbenzene	NE	7.0E-01 MCL/PCL
	Methylene Chloride	NE	5.0E-03 MCL/PCL
	Toluene	NE	1.0E+00 MCL/PCL
	Xylenes (total)	NE	1.0E+01 MCL/PCL
	Vinyl Chloride (selected well)*	NE	2.0E-03 MCL/PCL
	1,2-Diphenylhydrazine	NE	2.6E-03 PCL
	2,4-Dimethylphenol	A-TZ – 24 AAL B-CZ/B-TZ – 72 AAL C-TZ – 9.74 AAL	1.5E+00 PCL
	2,4-Dinitrotoluene	NE	3.0E-03 PCL
	2,6-Dinitrotoluene	NE	3.0E-03 PCL
	2-Chloronaphthalene	NE	5.8E+00 PCL
	2-Methyl-4,6-dinitrophenol	NE	7.3E-03 PCL
	2-Methylnaphthalene	A-TZ – 1.5 AAL B-CZ/B-TZ – 2.4 AAL C-TZ – 28 AAL	2.9E-01 PCL
	4-Nitrophenol	NE	1.5E-01 PCL
	Acenaphthene	NE	4.4E+00 PCL
	Acenaphthylene	NE	4.4E+00 PCL
	Anthracene	NE	2.2E+01 PCL
	Benzo(a)anthracene	NE	2.8E-03 PCL
	Benzo(a)pyrene	NE	2.0E-04 PCL
	bis(2-chloroethoxy)methane	NE	1.9E-03 PCL
	bis(2-ethylhexyl)phthalate	NE	6.0E-03 PCL
	Chrysene	NE	2.8E-01 PCL
	Dibenzofuran	A-TZ – 0.52 AAL B-CZ/B-TZ – 0.65 AAL C-TZ – 46 AAL	2.9E-01 PCL
	Di-n-butyl Phthalate	NE	7.3E+00 PCL
	Fluoranthene	NE	2.9E+00 PCL
	Fluorene	NE	2.9E+00 PCL
	Naphthalene	A-TZ – 26.16 AAL B-CZ/B-TZ – 87.86 AAL C-TZ – 83 AAL	1.5E+00 PCL

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l) (C/I)	COLUMN C Groundwater Protection Standards (GWPS) at Alternate Point of Exposure (APOE) $^{GW}GW_{Ing}$ (mg/l) (C/I)
	Nitrobenzene	NE	1.5E-01 [PCL]
	n-Nitrosodiphenylamine	NE	4.2E-01 [PCL]
	Pentachlorophenol	NE	1.0E-03 [PCL]
	Phenanthrene	NE	2.2E+00 [PCL]
	Phenol	NE	2.2E+01 [PCL]
	Pyrene	NE	2.2E+00 [PCL]

Note:

$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Commercial/Industrial assuming Class 2 Groundwater, November 12, 2014; Table 3.

AAL – Attenuation Action Levels established in CP Attachment XI.D, value listed is maximum AAL for the GWBU PMZ

NE – Not established (see CP Attachment XI.D)

AMP – Attenuation Monitoring Point, established for each groundwater-bearing unit (GWBU) (A-TZ, B-CZ/B-TZ, and C-TZ) where Plume Management Zones (PMZ) are established (see CP Attachment XI.D)

*The following well will be sampled for Vinyl Chloride on a semi-annual basis: MW-18A

CP Table III: Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard

Off-Site PMZ (City of Houston-owned ROW and Non-UPRR owned Properties)

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN B Groundwater Protection Standards (GWPS) at Point of Exposure (POE) $^{GW}GW_{Ing}$ (mg/l) (Res)
Off Site PMZ	1,2-Dichloroethane	NE	5.0E-03 MCL/PCL
	Benzene	A-TZ – 1.5 AAL B-CZ/B-TZ – 38.45 AAL C-TZ – 0.13 AAL	5.0E-03 MCL/PCL
	Chlorobenzene	NE	1.0E-01 MCL/PCL
	Ethylbenzene	NE	7.0E-01 MCL/PCL
	Methylene Chloride	NE	5.0E-03 MCL/PCL
	Toluene	NE	1.0E+00 MCL/PCL
	Xylenes (total)	NE	1.0E+01 MCL/PCL
	Vinyl Chloride (selected wells)*	NE	2.0E-03 MCL/PCL
	1,2-Diphenylhydrazine	NE	1.1E-03 PCL
	2,4-Dimethylphenol	A-TZ – 24 AAL B-CZ/B-TZ – 72 AAL C-TZ – 9.74 AAL	4.9E-01 PCL
	2,4-Dinitrotoluene	NE	1.3E-03 PCL
	2,6-Dinitrotoluene	NE	1.3E-03 PCL
	2-Chloronaphthalene	NE	2.0E+00 PCL
	2-Methyl-4,6-dinitrophenol	NE	2.4E-03 PCL
	2-Methylnaphthalene	A-TZ – 1.5 AAL B-CZ/B-TZ – 2.4 AAL C-TZ – 28 AAL	9.8E-02 PCL
	4-Nitrophenol	NE	4.9E-02 PCL
	Acenaphthene	NE	1.5E+00 PCL
	Acenaphthylene	NE	1.5E+00 PCL
	Anthracene	NE	7.3E+00 PCL
	Benzo(a)anthracene	NE	1.3E-03 PCL
	Benzo(a)pyrene	NE	2.0E-04 PCL
	bis(2-chloroethoxy)methane	NE	8.3E-04 PCL
	bis(2-ethylhexyl)phthalate	NE	6.0E-03 PCL
	Chrysene	NE	1.3E-01 PCL
	Dibenzofuran	A-TZ – 0.52 AAL B-CZ/B-TZ – 0.65 AAL C-TZ – 46 AAL	9.8E-02 PCL
	Di-n-butyl Phthalate	NE	2.4E+00 PCL
	Fluoranthene	NE	9.8E-01 PCL
	Fluorene	NE	9.8E-01 PCL
	Naphthalene	A-TZ – 26.16 AAL B-CZ/B-TZ – 87.86 AAL C-TZ – 83 AAL	4.9E-01 PCL

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN B Groundwater Protection Standards (GWPS) at Point of Exposure (POE) $^{GW}GW_{Ing}$ (mg/l) (Res)
	Nitrobenzene	NE	4.9E-02 [PCL]
	n-Nitrosodiphenylamine	NE	1.9E-01 [PCL]
	Pentachlorophenol	NE	1.0E-03 [PCL]
	Phenanthrene	NE	7.3E-01 [PCL]
	Phenol	NE	7.3E+00 [PCL]
	Pyrene	NE	7.3E-01 [PCL]

Note:
$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Commercial/Industrial assuming Class 2 Groundwater, November 12, 2014; Table 3.
AAL – Attenuation Action Levels established in CP Attachment XI.D, value listed is maximum AAL for the GWBU PMZ
NE – Not established (see CP Attachment XI.D)
AMP – Attenuation Monitoring Point, established for each groundwater-bearing unit (GWBU) (A-TZ, B-CZ/B-TZ, and C-TZ) where Plume Management Zones (PMZ) are established (see CP Attachment XI.D)
*The following well will be sampled for Vinyl Chloride on a semi-annual basis: MW33-BR and MW-17C

CP Table IIIA: Corrective Action Program Table of Indicator Parameters and Groundwater Protection Standard

On-Site PMZ (Main and West)

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN C Groundwater Protection Standards (GWPS) at Alternate Point of Exposure (APOE) $^{GW}GW_{Ing}$ (mg/l) (C/I)
A-TZ	Benzene	1.5 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	24 AAL	1.5 PCL
	2 Methylnaphthalene	1.5 AAL	0.29 PCL
	Dibenzofuran	0.52 AAL	0.29 PCL
	Naphthalene	26.16 AAL	1.5 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
B-CZ/B-TZ	Benzene	38.45 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	72 AAL	1.5 PCL
	2 Methylnaphthalene	2.4 AAL	0.29 PCL
	Dibenzofuran	0.65 AAL	0.29 PCL
	Naphthalene	87.86 AAL	1.5 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
C-TZ	Benzene	0.13 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	9.74 AAL	1.5 PCL
	2 Methylnaphthalene	28 AAL	0.29 PCL
	Dibenzofuran	46 AAL	0.29 PCL
	Naphthalene	83 AAL	1.5 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL

Note:
$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Commercial/Industrial assuming Class 2 Groundwater, November 12, 2014; Table 3.
AAL – Attenuation Action Levels established in CP Attachment XI.D, value listed is maximum AAL for the GWBU PMZ
NE – Not established (see CP Attachment XI.D)
AMP – Attenuation Monitoring Point, established for each groundwater-bearing unit (GWBU) (A-TZ, B-CZ/B-TZ, and C-TZ) where Plume Management Zones (PMZ) are established (see CP Attachment XI.D)
*The following on-site wells will be sampled for Vinyl Chloride on a semi-annual basis: MW-18A and MW-17C

CP Table IIIA: Corrective Action Program Table of Indicator Parameters and Groundwater Protection Standard

Off-Site PMZ (City of Houston-owned ROW)

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN C Groundwater Protection Standards (GWPS) at Point of Exposure (POE) $^{GW}GW_{Ing}$ (mg/l) (Res)
A-TZ	Benzene	1.5 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	24 AAL	0.49 PCL
	2 Methylnaphthalene	1.5 AAL	0.098 PCL
	Dibenzofuran	0.52 AAL	0.098 PCL
	Naphthalene	26.16 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
B-CZ/B-TZ	Benzene	38.45 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	72 AAL	0.49 PCL
	2 Methylnaphthalene	2.4 AAL	0.098 PCL
	Dibenzofuran	0.65 AAL	0.098 PCL
	Naphthalene	87.86 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
C-TZ	Benzene	0.13 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	9.74 AAL	0.49 PCL
	2 Methylnaphthalene	28 AAL	0.098 PCL
	Dibenzofuran	46 AAL	0.098 PCL
	Naphthalene	83 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL

Note:
$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Commercial/Industrial assuming Class 2 Groundwater, November 12, 2014; Table 3.
AAL – Attenuation Action Levels established in CP Attachment XI.D, value listed is maximum AAL for the GWBU PMZ
NE – Not established (see CP Attachment XI.D)
AMP – Attenuation Monitoring Point, established for each groundwater-bearing unit (GWBU) (A-TZ, B-CZ/B-TZ, and C-TZ) where Plume Management Zones (PMZ) are established (see CP Attachment XI.D)
*The following off-site wells will be sampled for Vinyl Chloride on a semi-annual basis: MW33-BR

CP Table IIIA: Corrective Action Program Table of Indicator Parameters and Groundwater Protection Standard

Off-Site - Non-UPRR Owned Properties

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standards at Attenuation Monitoring Point (AMP) $^{GW}GW_{Ing}$ (mg/l)	COLUMN C Groundwater Protection Standards (GWPS) at Point of Exposure (POE) $^{GW}GW_{Ing}$ (mg/l) (Res)
A-TZ	Benzene	1.5 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	24 AAL	0.49 PCL
	2 Methylnaphthalene	1.5 AAL	0.098 PCL
	Dibenzofuran	0.52 AAL	0.098 PCL
	Naphthalene	26.16 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
B-CZ/B-TZ	Benzene	38.45 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	72 AAL	0.49 PCL
	2 Methylnaphthalene	2.4 AAL	0.098 PCL
	Dibenzofuran	0.65 AAL	0.098 PCL
	Naphthalene	87.86 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL
C-TZ	Benzene	0.13 AAL	0.005 MCL/PCL
	2,4-Dimethylphenol	9.74 AAL	0.49 PCL
	2 Methylnaphthalene	28 AAL	0.098 PCL
	Dibenzofuran	46 AAL	0.098 PCL
	Naphthalene	83 AAL	0.49 PCL
	Vinyl Chloride*	NE	0.002 MCL/PCL

Note:
$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Commercial/Industrial assuming Class 2 Groundwater, November 12, 2014; Table 3.
AAL – Attenuation Action Levels established in CP Attachment XI.D, value listed is maximum AAL for the GWBU PMZ
NE – Not established (see CP Attachment XI.D)
AMP – Attenuation Monitoring Point, established for each groundwater-bearing unit (GWBU) (A-TZ, B-CZ/B-TZ, and C-TZ) where Plume Management Zones (PMZ) are established (see CP Attachment XI.D)
*The following off-site wells will be sampled for Vinyl Chloride on a semi-annual basis: MW33-BR

CP Table IV: Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Quantitation Limits

Solid Waste Management Unit (SWMU) 1

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Quantitation Limits (mg/l)
SWMU 1 A-TZ POC/ Background Wells	Acenaphthene	ND (0.0001)
	Acenaphthylene	ND (0.0001)
	Anthracene	ND (0.0001)
	bis(2-ethylhexyl)phthalate	ND (0.0002)
	Dibenzofuran	ND (0.0001)
	Fluoranthene	ND (0.0001)
	Fluorene	ND (0.0001)
	2-Methylnaphthalene	ND (0.0001)
	Naphthalene	ND (0.0001)
	Phenanthrene	ND (0.0001)
	Pyrene	ND (0.0001)
SWMU 1 B-TZ POC/ Background Wells	Acenaphthene	ND (0.0001)
	Acenaphthylene	ND (0.0001)
	Anthracene	ND (0.0001)
	bis(2-ethylhexyl)phthalate	ND (0.0002)
	Dibenzofuran	ND (0.0001)
	Di-n-butyl phthalate	ND (0.0002)
	Fluoranthene	ND (0.0001)
	Fluorene	ND (0.0001)
	Naphthalene	ND (0.0001)
	Phenol	ND (0.0002)
	Pyrene	ND (0.0001)

Note:
ND – Not detectable at the method quantitation limit (MQL), which is defined in §350.4(54) as "The lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory."

CP Table IVA: Compliance Monitoring Program Table of Detected Hazardous Constituents and the Groundwater Protection Standard

Solid Waste Management Unit (SWMU) 1

Unit Name	COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard ($^{GW}GW_{Ing}$)(mg/l)
SWMU 1 A-TZ POC/ Background Wells	Acenaphthene	1.5 PCL
	Acenaphthylene	1.5 PCL
	Anthracene	7.3 PCL
	bis(2-ethylhexyl)phthalate	0.006 PCL
	Dibenzofuran	0.098 PCL
	Fluoranthene	0.98 PCL
	Fluorene	0.98 PCL
	2-Methylnaphthalene	0.098 PCL
	Naphthalene	0.49 PCL
	Phenanthrene	0.73 PCL
	Pyrene	0.73 PCL
SWMU 1 B-TZ POC/ Background Wells	Acenaphthene	1.5 PCL
	Acenaphthylene	1.5 PCL
	Anthracene	7.3 PCL
	bis(2-ethylhexyl)phthalate	0.006 PCL
	Dibenzofuran	0.098 PCL
	Di-n-butyl phthalate	2.4 PCL
	Fluoranthene	0.98 PCL
	Fluorene	0.98 PCL
	Naphthalene	0.49 PCL
	Phenol	7.3 PCL
	Pyrene	0.73 PCL

Note:
$^{GW}GW_{Ing}$ Protective Concentration Levels (PCLs), Residential land use assuming Class 2 Groundwater, November 12, 2014; Table 3.

CP Table V: Designation of Wells

Point of Compliance Wells: (SWMU 1 Only)

- A-TZ POC wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- B-TZ POC wells: MW-10B, MW-11B, and P-10.

Point of Exposure Wells:

NONE

Alternate Point of Exposure Wells (PMZ Wells):

1. A-TZ

   MW-15A, MW-25A, MW-26A, MW-35A, MW-36A, MW-50A, MW-59A, MW-60A, MW-61A, MW-69A, MW-77A

2. B-TZ

   MW-36B, MW-38B, MW-39B, MW-42B, MW-59B, MW-62B, MW-67B, MW-80B, MW-81B, P-11, *PMW-83B, *PMW-84B

3. C-TZ

   MW-15C, MW-28C, MW-47C, MW-48C, MW-54C, *PMW-83C, *PMW-85C

Background Wells:

1. A-TZ

   MW-8

2. B-TZ

   P-12

FOA Boundary of Compliance Wells Background Wells:

Exposure Pathway: (e.g. SWGW - Groundwater to surface water PCL for Brazos River or Barge Canal, etc)

NONE

Note: Wells that are not listed in this table are subject to change, upon approval by the Executive Director, without modification to the Compliance Plan.

* - Proposed well, will be installed following approval of the Response Action Plan (see CP Attachment XI.D)

CP Table VI: Compliance Period for RCRA-Regulated Units

SWMU 1	Year or Number of Years
Year Waste Management Activities Initiated	1979
Year Closed (Certified Closed)	1984 (April 18)
Compliance Period	5 Years
Compliance Period Began	2015
Compliance Period Remaining	5 Years (2020)

CP Table VIII: Compliance Schedule

Item	**Compliance Schedule** (from the date of issuance of the Compliance Plan unless otherwise specified)	**Regulatory Citation**	**Requirement**
A.	60	Compliance Plan	Submit to the Executive Director a schedule summarizing all activities required by the Compliance Plan. The schedule shall list the starting dates of all routine activities. The Permittee shall include an updated schedule in the report required by Compliance Plan CP Table VII – Reporting Requirements. The schedule shall list the activity or report, the Compliance Plan Section which requires the activity or report and the calendar date the activity or report it to be completed or submitted (if this date can be determined).
B.	120 days from Compliance Plan Issuance	30 TAC §350.31(g)	Submit to the Executive Director proof of compliance with institutional control requirements in accordance with which provides notice of the existence and location of the Plume Management Zone (PMZ) and which prevents exposure to groundwater from this zone until such a time as constituents of concern may be reduced to below the Groundwater Protection Standards of CP Table III – Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard. • Filing of deed recordation for UPRR-owned properties requiring commercial/industrial land use and prohibiting groundwater use. Deed recordation will also restrict excavation activities over capped areas. • Filing of restrictive covenants prohibiting groundwater use for off-site PMZ.
C.	Notify within 30 days	30 TAC §350.33(k)	After an unexpected event occurs, or a condition is detected, during post-response action care period which indicates that additional response actions will be required at an affected property.
D.	Within 60 days of Compliance Plan Issuance		Plugging of monitoring wells within the capped area, installation of additional monitoring wells at the POEs
E.			
F.	Within 60 Days of Compliance Plan Issuance		DNAPL recovery will continue monthly on the portion of the site in which DNAPLs is recoverable in the Corrective Action System Wells.
G.	Within 60 Days of Compliance Plan Issuance		Collect groundwater sample from MW-66D to evaluate for benzo(a)pyrene concentrations
H.	180 Days	30 TAC §350.33(4)(D)	Conduct first semiannual groundwater monitoring event for Compliance and Corrective Action Monitoring. Groundwater sampling activities for both Compliance and Corrective Action will be conducted in January and July of each year

Item	**Compliance Schedule** (from the date of issuance of the Compliance Plan unless otherwise specified)	**Regulatory Citation**	**Requirement**
I.	Within 60 Days of Compliance Plan Issuance		Begin excavation of Surface Soil PCLE Zone, relocation under the AOC Policy, and construction of the soil cap, asphalt roadway, and concrete sidewalk.
J.	Annually		Annual Groundwater Corrective Action/Compliance Monitoring Report, documenting all remediation and post-response action activities at the Site including the Post-Response Action Care Reports (PRACR) and DNAPL recovery activities, submitted by January 21st of each year.

EXPLANATION

UPRR Property Boundary

UPRR Facility Boundary

N

Approx. Scale in Feet

0 300 600

SOURCE:
Base map from Google Earth, photography dated 12/31/43.

UNION PACIFIC RAILROAD CO.

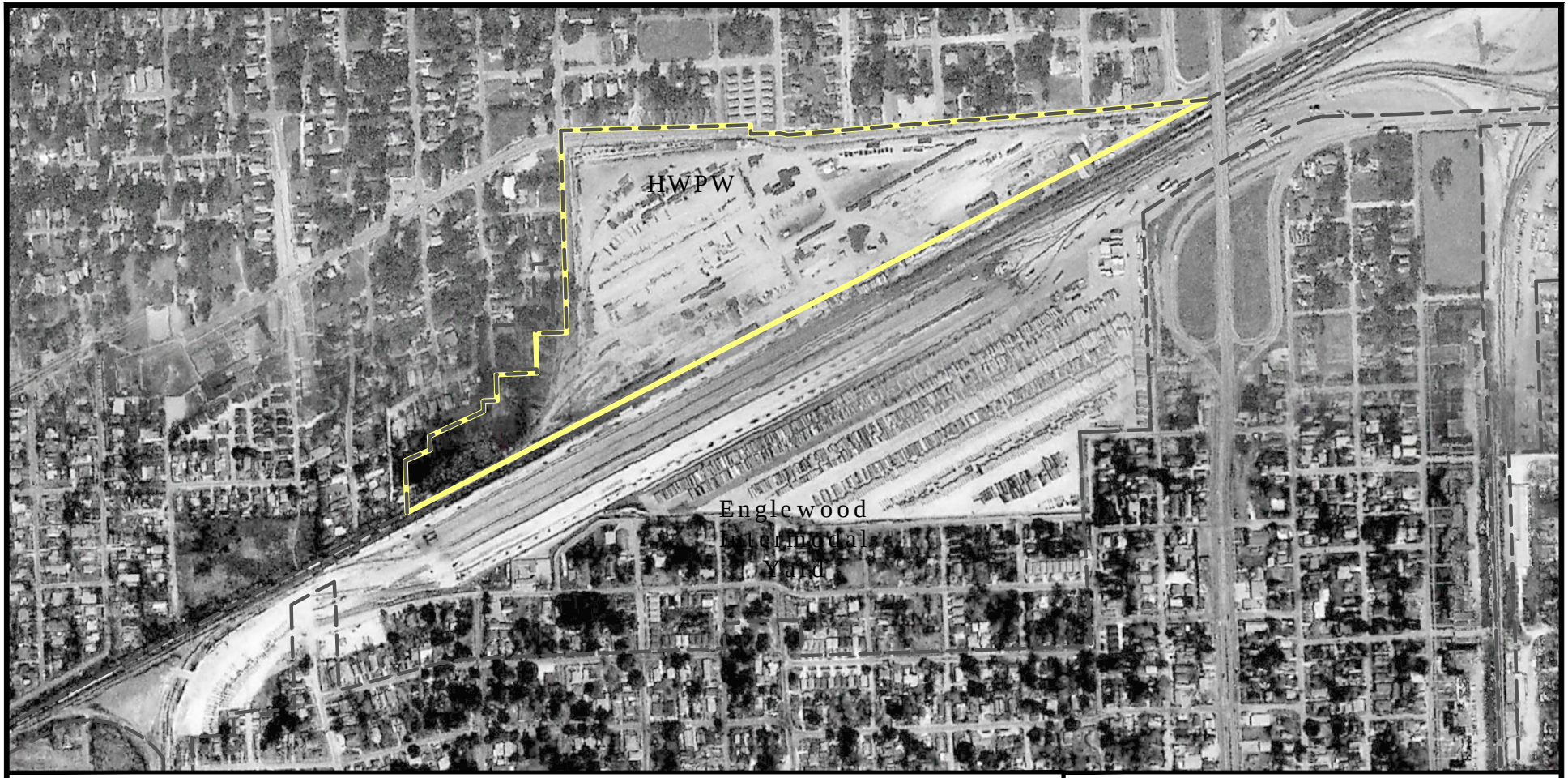
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.1d

1943 AERIAL PHOTOGRAPH

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

UPRR Property Boundary

UPRR Facility Boundary

N

Approx. Scale in Feet

0 300 600

SOURCE:
Base map from Google Earth, photography dated 12/31/88.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure XI.A.1d

1988 AERIAL PHOTOGRAPH

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

UPRR Property Boundary

UPRR Facility Boundary

N

Approx. Scale in Feet

0 300 600

SOURCE:
Base map from Google Earth, photography dated 4/8/14.

UNION PACIFIC RAILROAD CO.

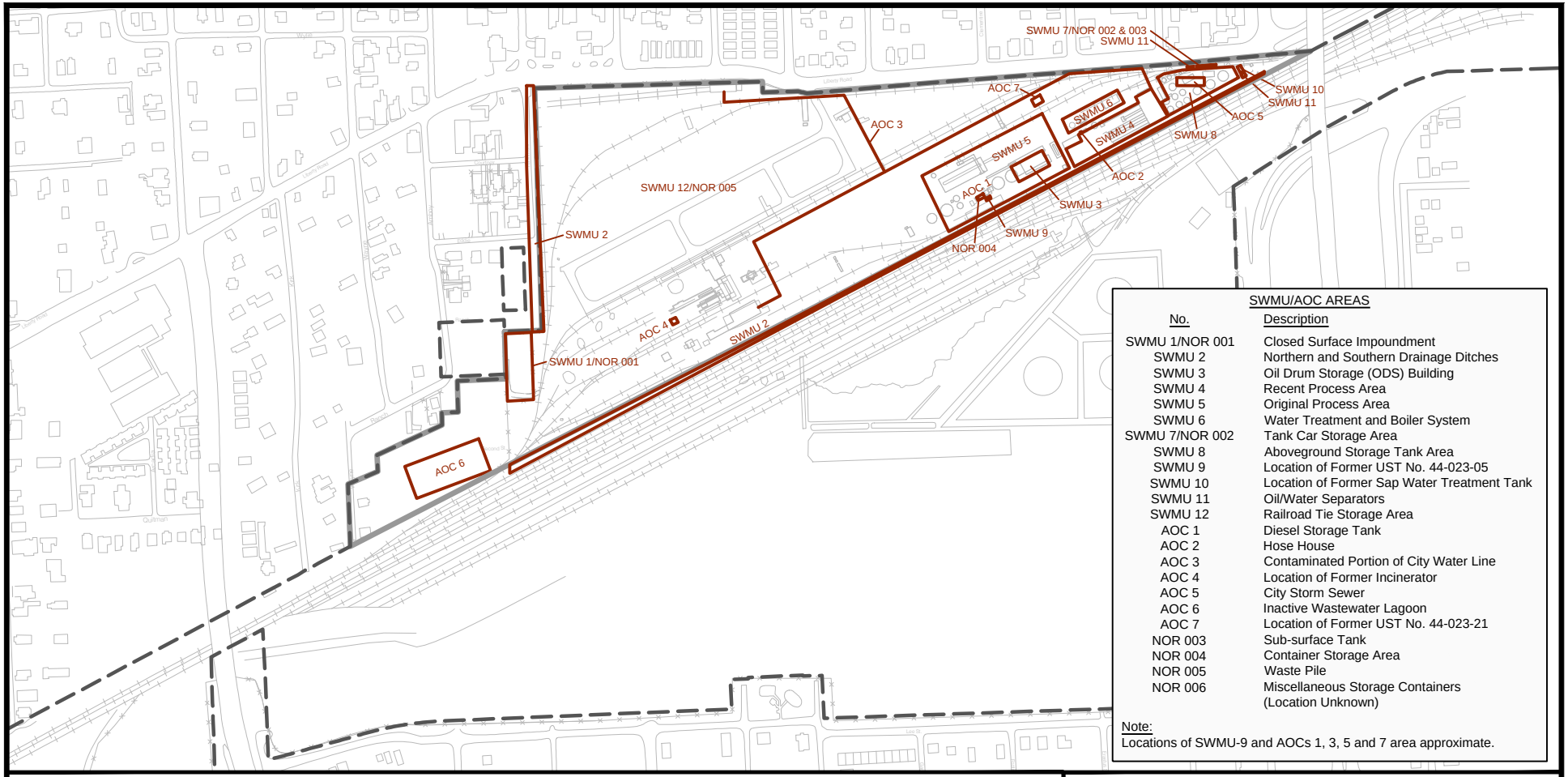
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.1d

2014 AERIAL PHOTOGRAPH

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



SWMU/AOC AREAS

No.	Description
SWMU 1/NOR 001	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 3	Oil Drum Storage (ODS) Building
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7/NOR 002	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 2	Hose House
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21
NOR 003	Sub-surface Tank
NOR 004	Container Storage Area
NOR 005	Waste Pile
NOR 006	Miscellaneous Storage Containers (Location Unknown)

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

EXPLANATION

- UPRR Property Boundary
- UPRR Facility Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad

N

Approx. Scale in Feet

0 250 500

SOURCE:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

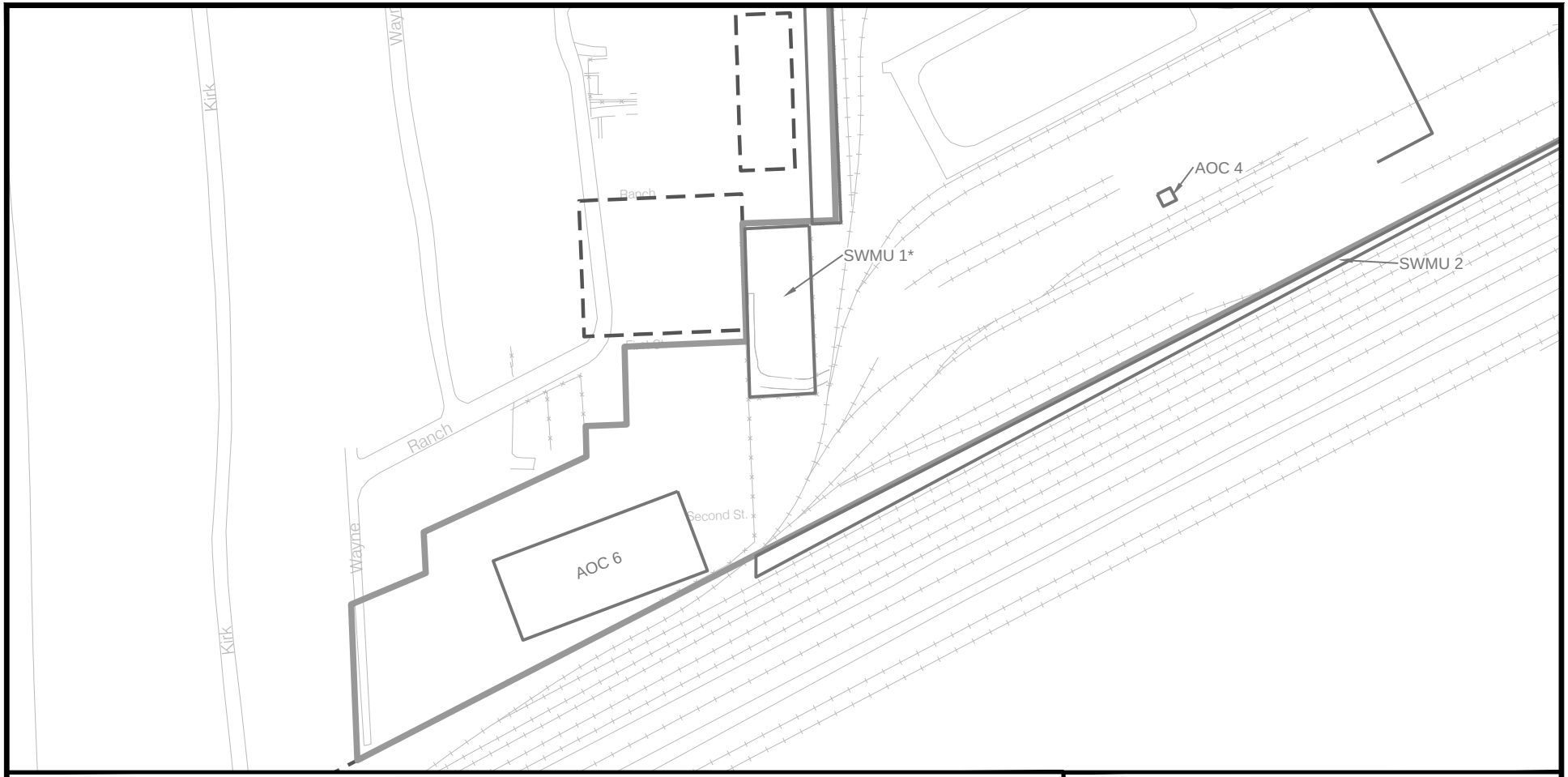
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.2

LOCATIONS OF FORMER WASTE MANAGEMENT UNITS

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- UPRR Facility Boundary

Notes:

* SWMU1 Under Detection Monitoring Program.

N

Approx. Scale in Feet

0 100 200

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

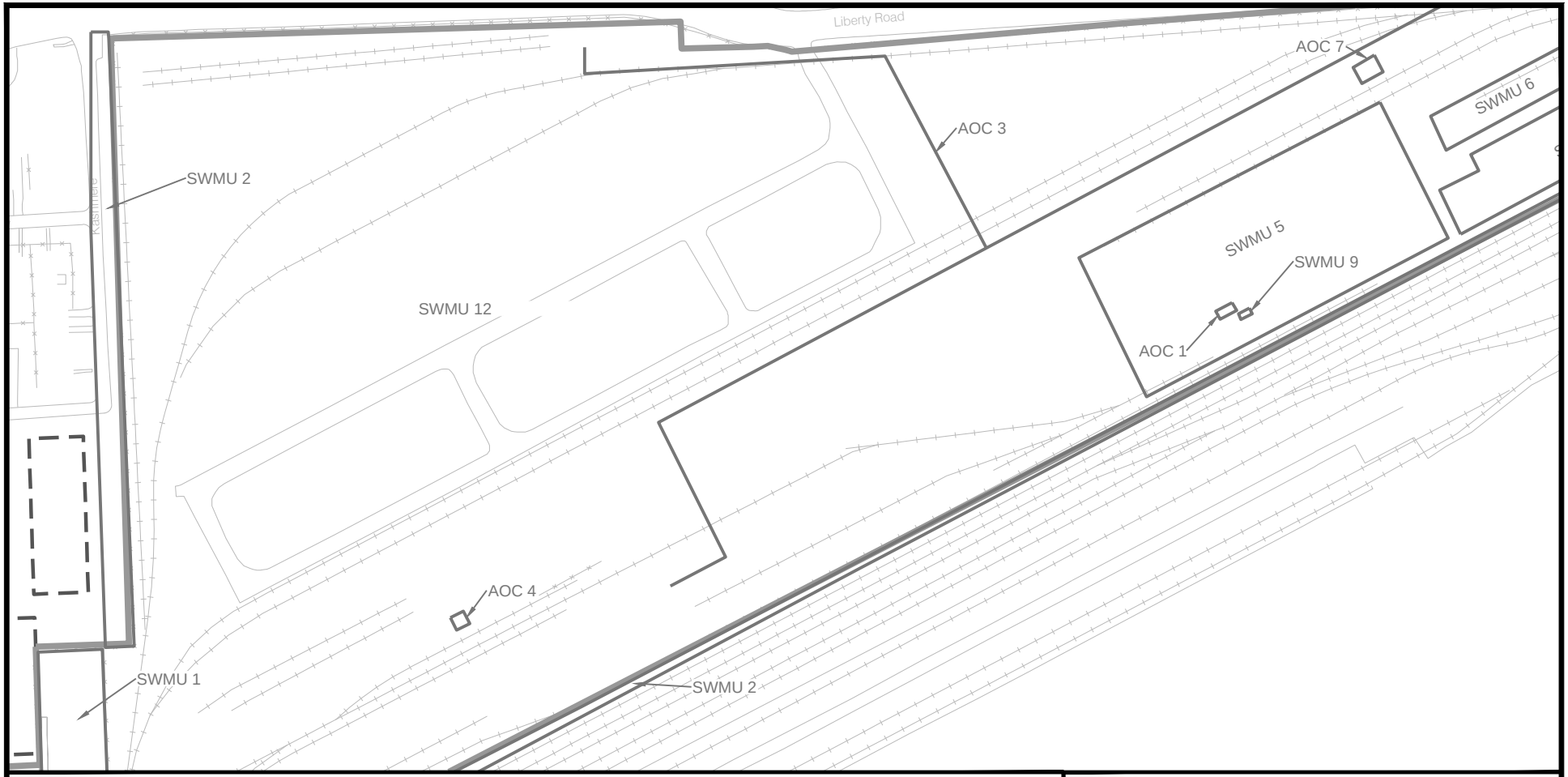
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.2.1

SWMUS/AOCS UNDER CORRECTIVE ACTION

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- UPRR Facility Boundary

N

Approx. Scale in Feet

0 100 200

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

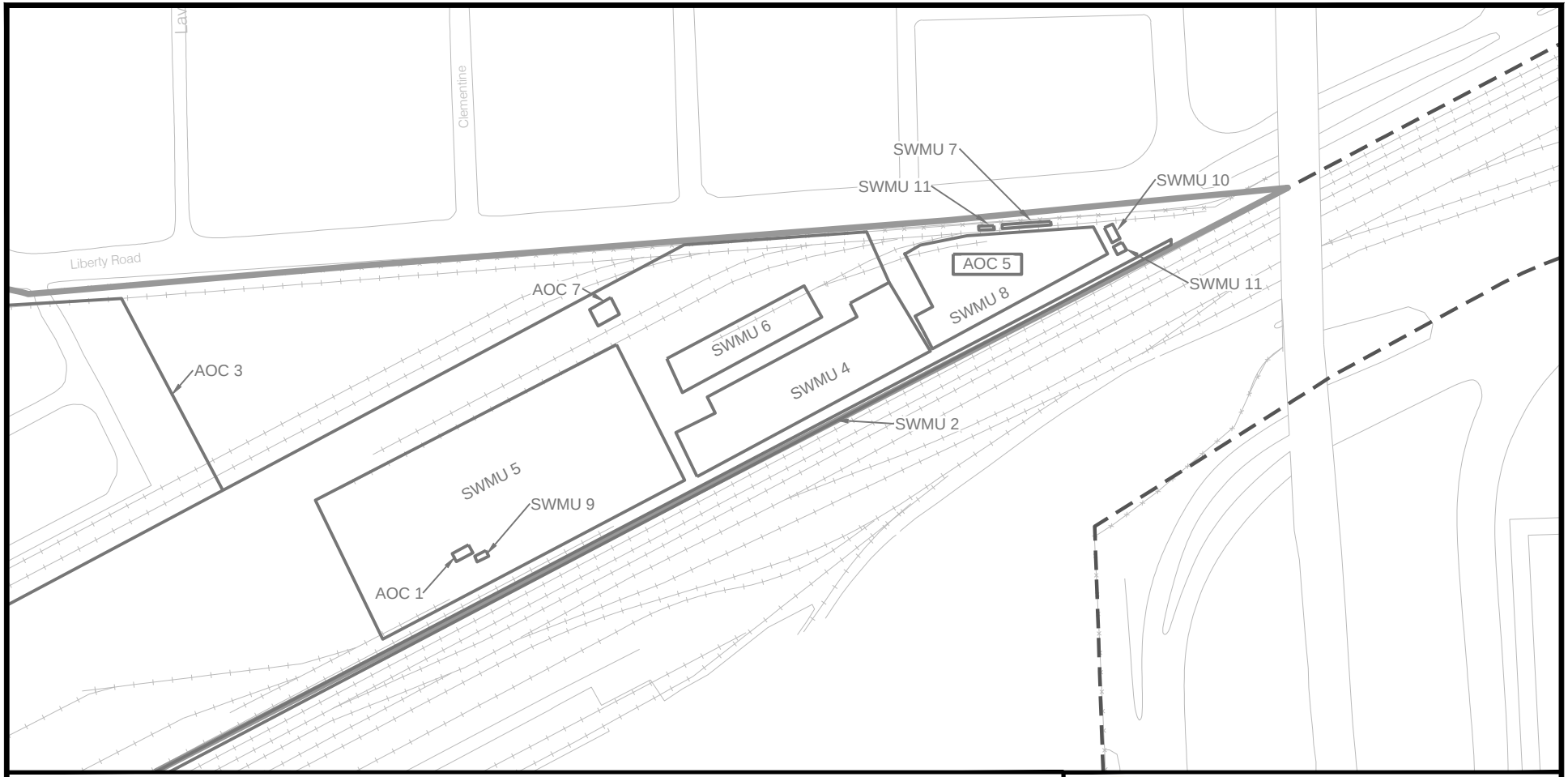
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.2.2

SWMUS/AOCS UNDER CORRECTIVE ACTION

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- UPRR Facility Boundary

N

Approx. Scale in Feet

0 100 200

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

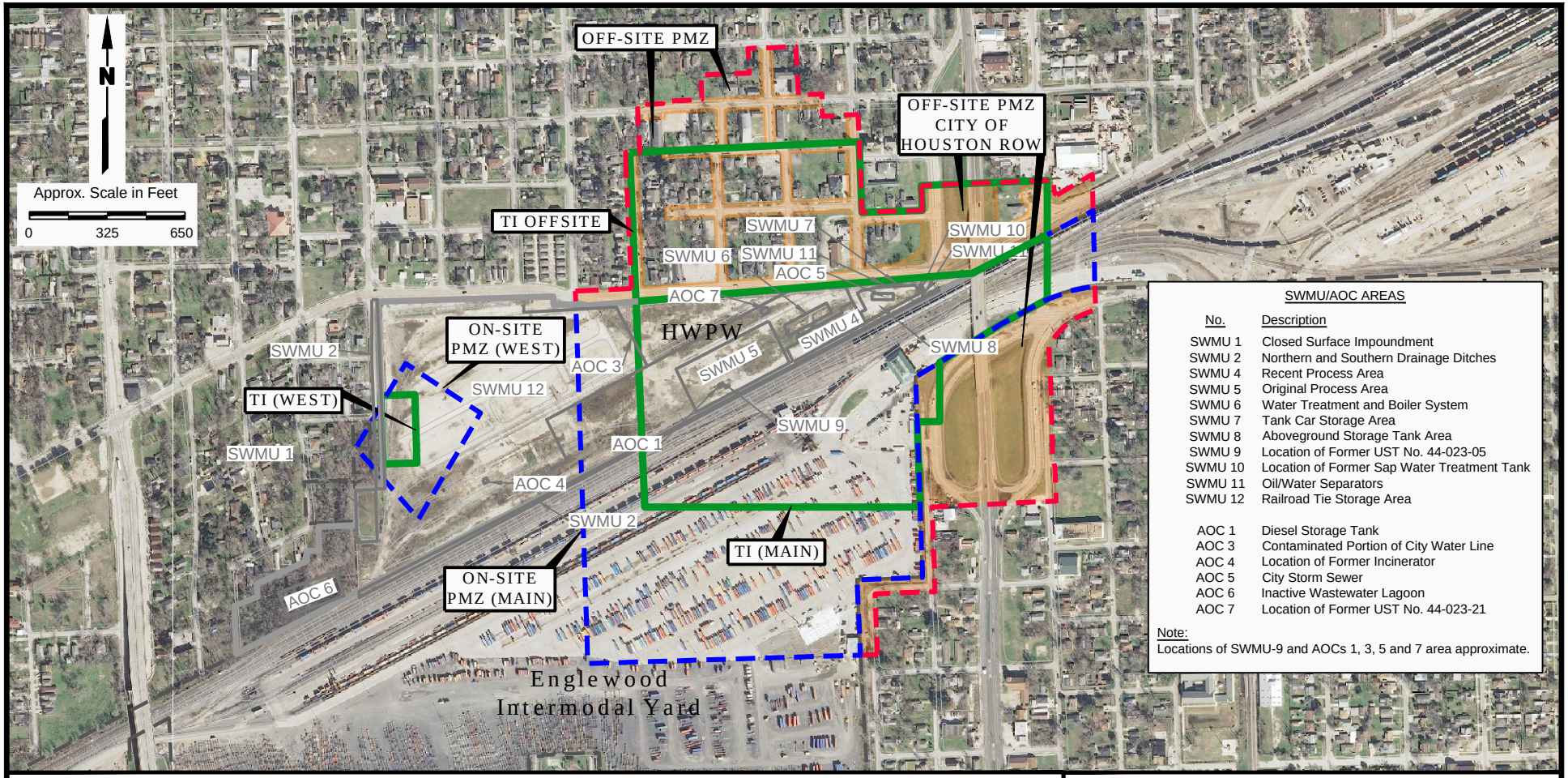
HOUSTON WOOD PRESERVING WORKS

Figure XI.A.2.3

SWMUS/AOCS UNDER CORRECTIVE ACTION

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Proposed TI Zone
- UPRR Facility Boundary

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

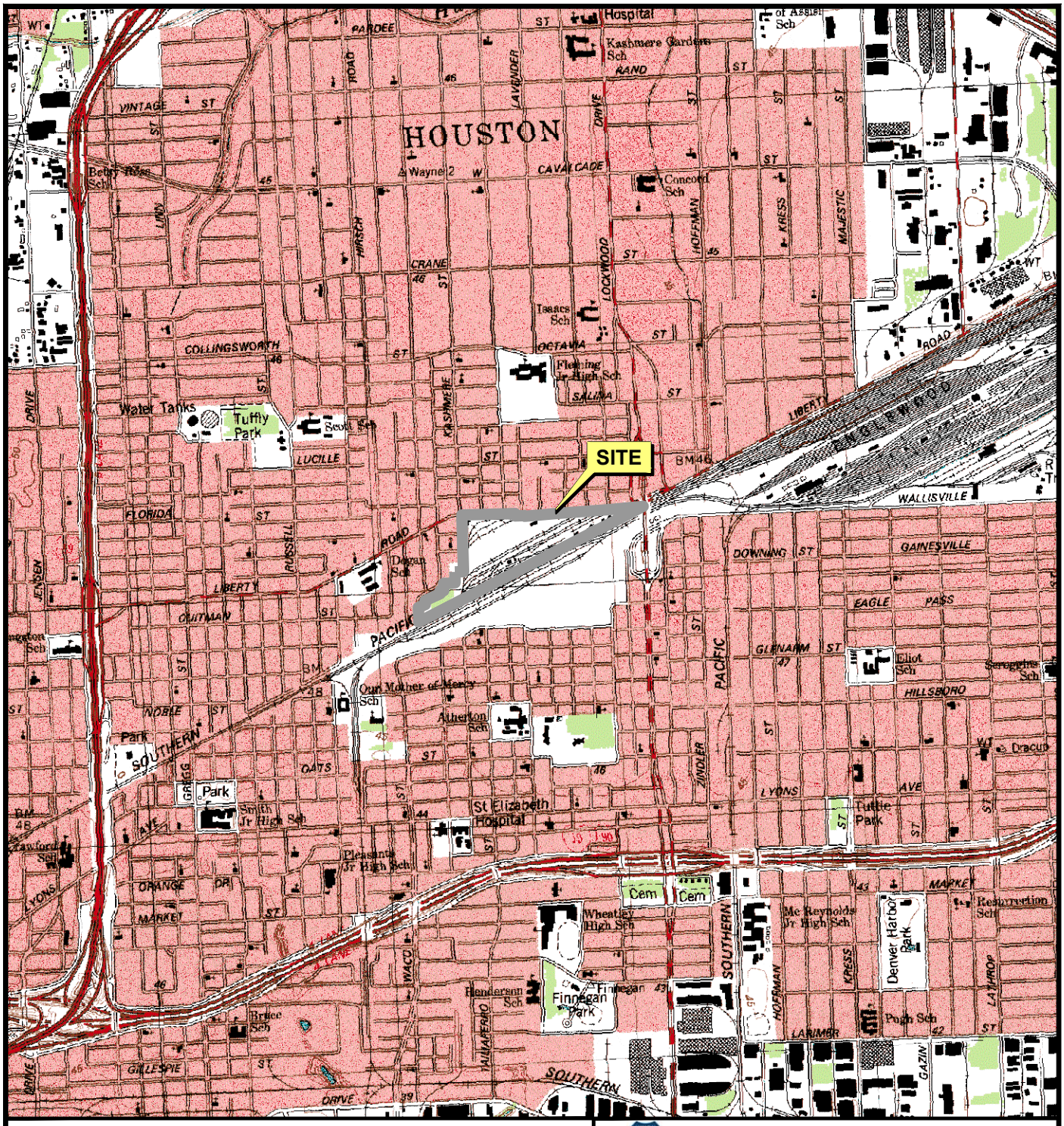
HOUSTON WOOD PRESERVING WORKS

CP Attachment A, Sheet 1 of 6

FACILITY SITE MAP

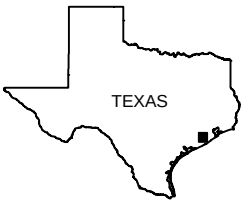
PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

UPRR Facility Boundary



QUADRANGLE LOCATIONS

N

Scale in Feet

0 1000 2000

SOURCE:
Base map from www.tnris.gov, Settegast, TX 7.5 min. USGS quadrangle dated 1982.

UNION PACIFIC RAILROAD CO.

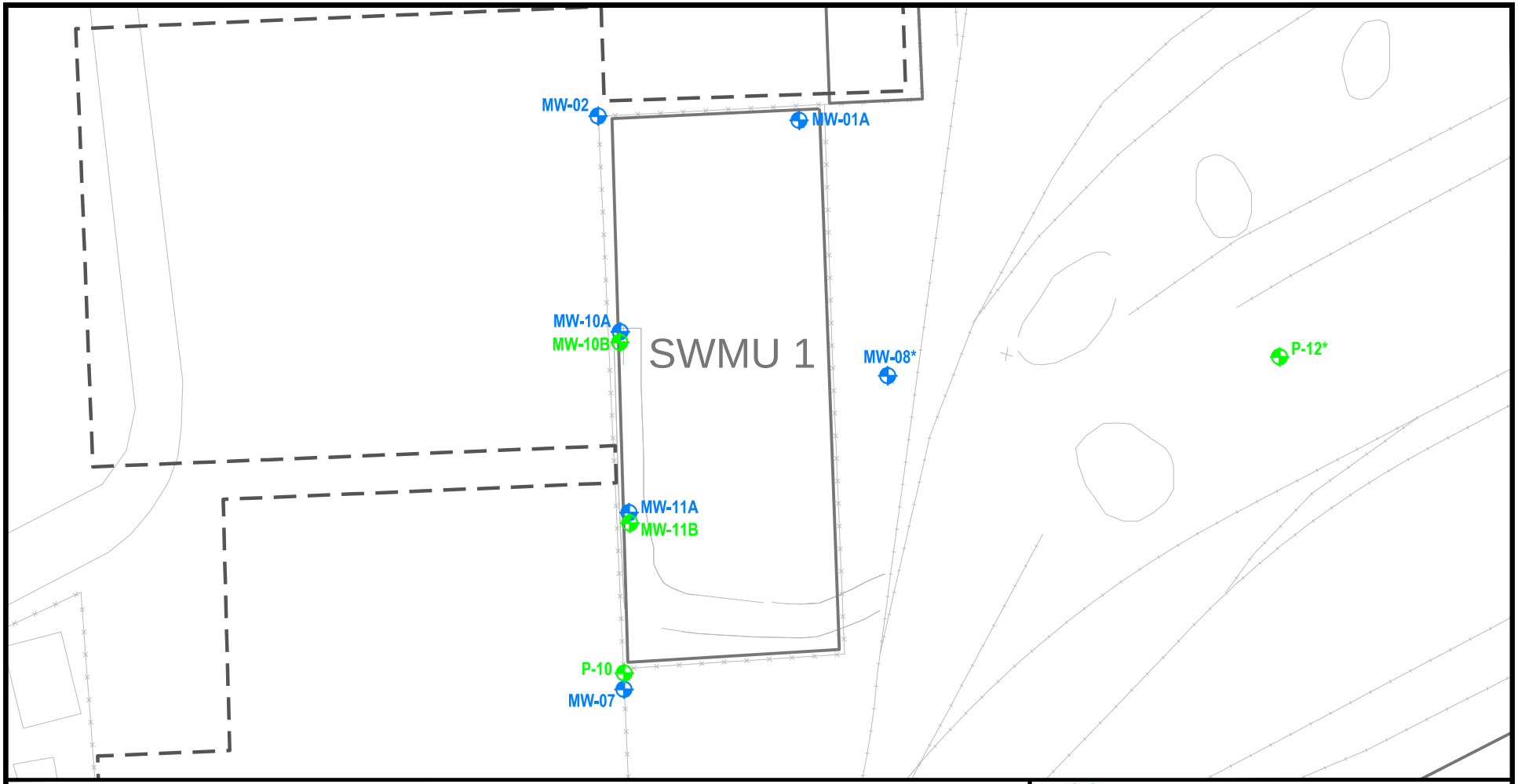
HOUSTON WOOD PRESERVING WORKS

CP Attachment A, Sheet 2 of 6

TOPOGRAPHIC MAP

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: DEC., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-TZ Monitoring Well Location

Note:
* Background well.

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST

N

Approx. Scale in Feet

0 30 60

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

UNION PACIFIC RAILROAD CO.

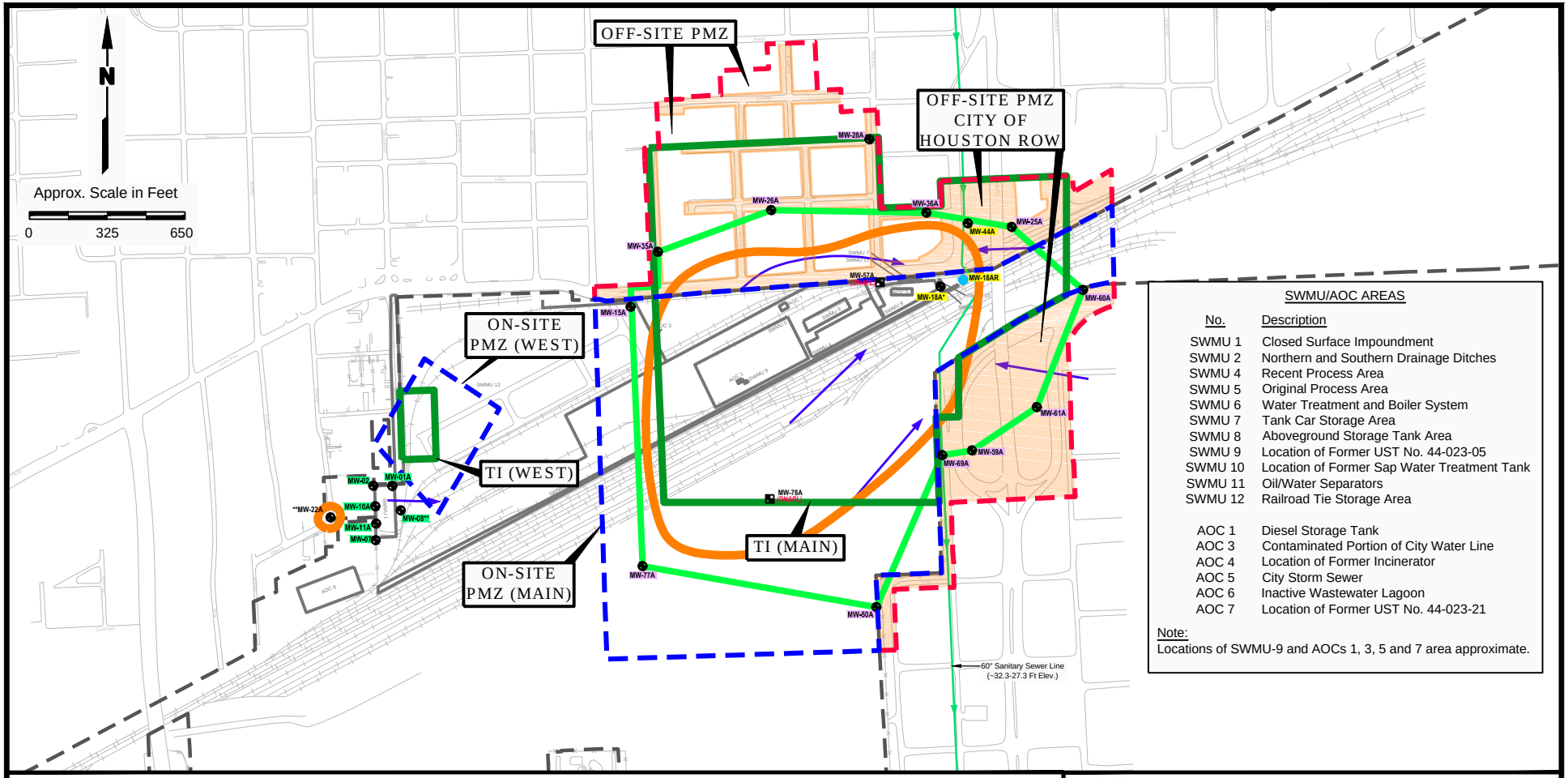
HOUSTON WOOD PRESERVING WORKS

CP Attachment A, Sheet 3 of 6

COMPLIANCE MONITORING WELL NETWORK TCEQ PERMIT 50343/SWMU 1/UNIT NO. 1

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- A-TZ Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- Proposed TI Zone
- A-TZ PMZ Boundary
- Proposed Monitoring Well
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

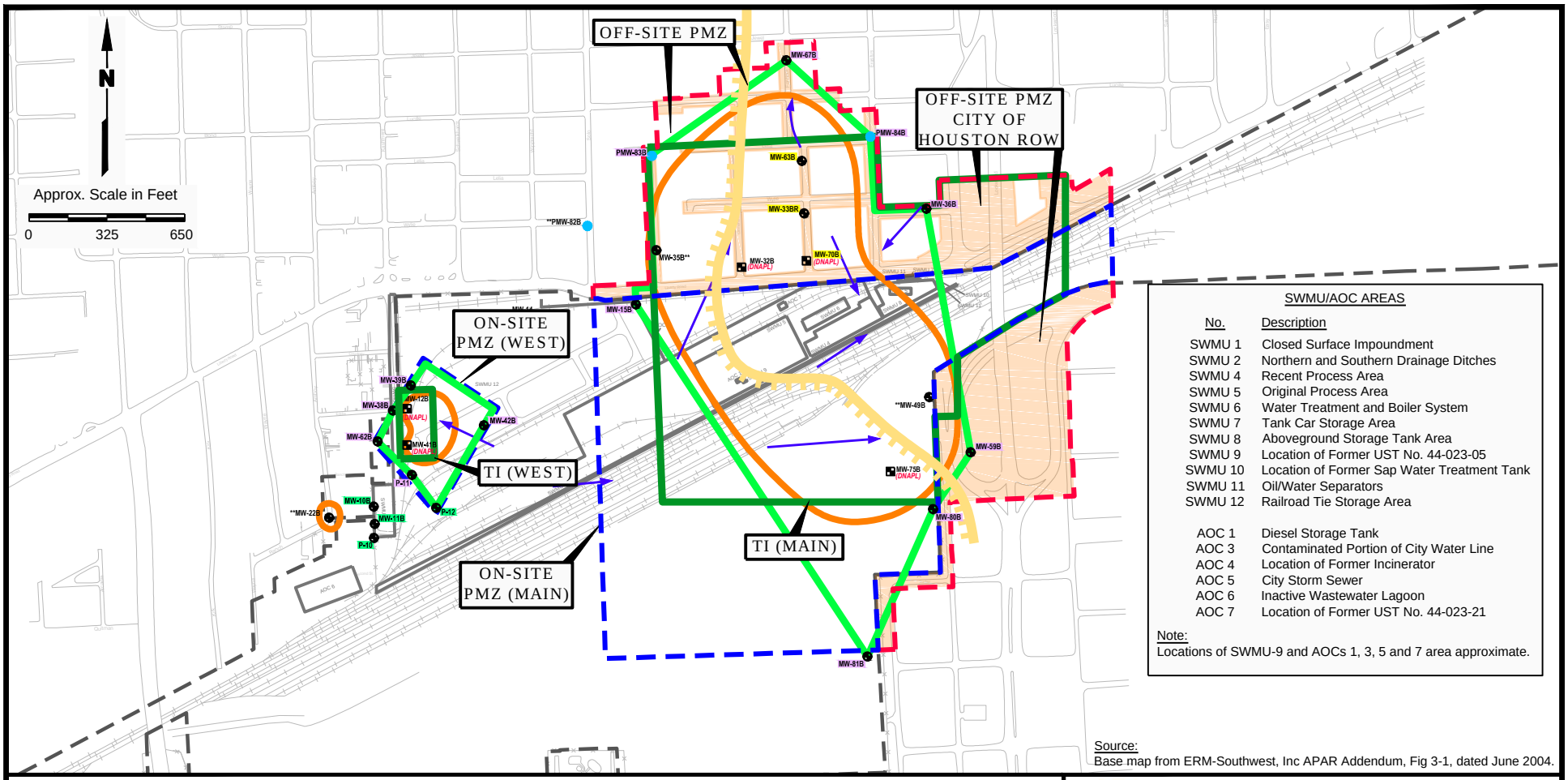
HOUSTON WOOD PRESERVING WORKS

CP Attachment A, Sheet 4 of 6

PMZ BOUNDARY MAP A-TZ

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- B Unit Monitoring Well Location
- B Unit Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- Proposed TI Zone
- B-CZ/B-TZ PMZ Boundary
- Proposed Monitoring Well
- B-TZ/B-CZ Boundary
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well

UNION PACIFIC RAILROAD CO.

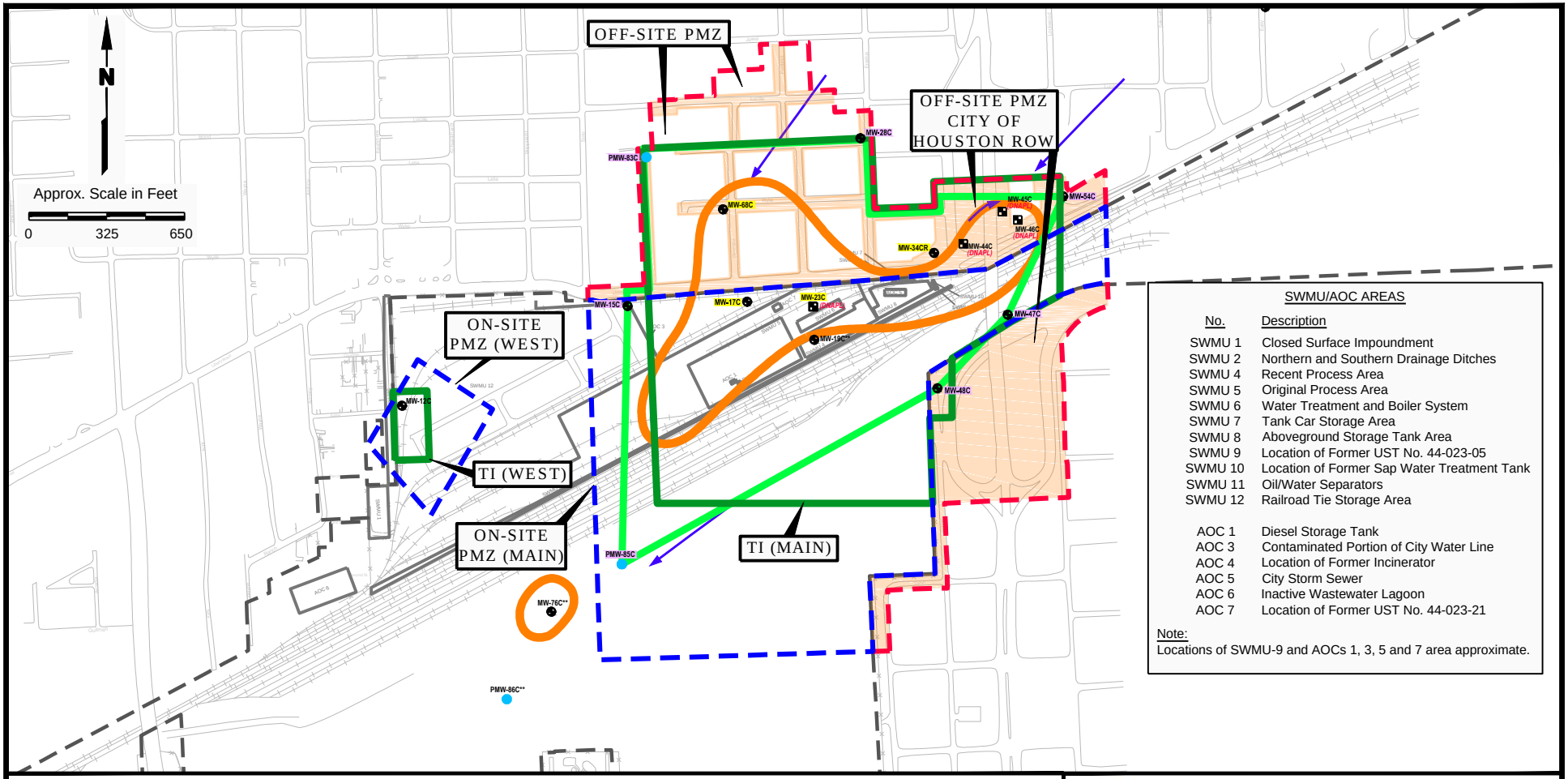
HOUSTON WOOD PRESERVING WORKS

CP Attachment A, Sheet 5 of 6

PMZ BOUNDARY MAP B-CZ/B-TZ

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- C-TZ Monitoring Well Location
- C-TZ Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- Proposed TI Zone
- C-TZ PMZ Boundary
- Proposed Monitoring Well
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment A, Sheet 6 of 6

PMZ BOUNDARY MAP C-TZ

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	Rev 1

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

RCRA PART B APPLICATION
COMPLIANCE PLAN ATTACHMENT XI.D – VOL I

RESPONSE ACTION PLAN – Revision No. 1

UNION PACIFIC RAILROAD
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

DECEMBER 7, 2015

Prepared for:

Mr. Geoffrey Reeder, P.G.
UNION PACIFIC RAILROAD COMPANY

24125 Aldine Westfield Road
Spring, Texas 77373

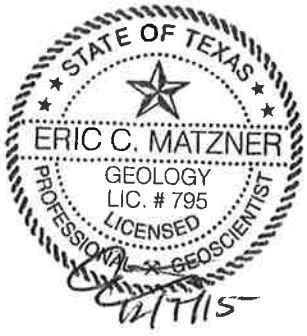
Prepared by:

PASTOR, BEHLING & WHEELER, LLC

2201 Double Creek Drive, Suite 4004
Round Rock, Texas 78664
(512) 671-3434

Texas Geoscience Firm No. 50248

PBW Project No. 1358



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Response Action Plan

Cover Page

Regulatory ID number (Solid waste registration number, VCP ID number, etc) SWR No. 31547
check one: X Initial submittal for this on-site property ___ Subsequent submittal for this on-site property
Report date: December 7, 2015 – Rev 1 TCEQ Region No.: 12

TCEQ Program (check one)

- [X] Corrective Action (Mail Code 127)
- [ ] Voluntary Cleanup Program (Mail Code 221)
- [ ] RPR Section (Mail Code 137)
- [ ] Superfund PRP Lead (Mail Code 143)
- [ ] Municipal Solid Waste Permits (Mail Code 124)

On-Site Property Information

On-Site Property Name: Union Pacific Railroad Houston Wood Preserving Works Site
Street no. 4910 Pre dir: ___ Street name Liberty Street type: Road Post dir: ___
City: Houston County: Harris County Code: 101 Zip: 77007
Nearest street intersection or location description: Site is located south of Liberty Rd. between Kashmere St. and Lockwood St, and north of Lee St.

Latitude: Decimal Degrees (circle one) North 29.787413
Longitude: Decimal Degrees (circle one) West 95.321062

Off-Site Affected Property Information

Off-Site Affected Property Name: See Appendix 5 for Off-Site Affected Property information
Physical Address: NA
Street no. ___ Pre dir: ___ Street name ___ Street type: ___ Post dir: ___
City: ___ County: ___ County Code: ___ Zip: ___

[ ] Check if no off-site properties affected

Contact Person Information and Acknowledgement

Person (or company) Name: Union Pacific Railroad
Contact Person: Geoffrey Reeder Title: Manager, Site Remediation
Mailing Address: 24125 Aldine Westfield
City: Spring State: TX Zip: 77373 E-mail address gbreeder@up.com
Phone: 281-350-7197 Fax: 402-233-2351

By my signature below, I acknowledge the requirement of §350.2(a) that no person shall submit information to the executive director or to parties who are required to be provided information under this chapter which they know or reasonably should have known to be false or intentionally misleading, or fail to submit available information which is critical to the understanding of the matter at hand or to the basis of critical decisions which reasonably would have been influenced by that information. Violation of this rule may subject a person to the imposition of civil, criminal, or administrative penalties.

Signature of Person Digitally signed by Geoffrey Reeder DN: cn=Geoffrey Reeder, o=Union Pacific Railroad, ou=Environmental Site Remediation, email=gbreeder@up.com, c=US Date: 2015.12.03 14:08:39 -06'00' Name, print: Geoffrey Reeder Date: 120315

RAP Executive Summary	ID No.: SWR No. 31547
	Report Date: December 7, 2015 - Rev 1

Use this worksheet to summarize the report. Be sure to complete and submit the Checklist for Report Completeness. **Attach a chronology of activities associated with the affected property.**

Briefly describe the affected property and PCLE zones, the conclusions from the assessment activities, identify any affected or threatened receptors, and describe any other major considerations taken into account when developing this response action plan. If any portion of the response action is necessitated due to an aesthetic or nuisance condition, identify the nature of that condition and identify that portion of the response action proposed to address it. If any media that contains a PCLE zone is not addressed in this RAP, provide justification.

Property Location, Land Use, and Operations

The Union Pacific Railroad (UPRR) Houston Wood Preserving Works (HWPW) Facility at 4910 Liberty Road, Houston, Harris County, Texas (the Site) is located within unoccupied industrial land and also includes the Englewood Intermodal Yard, which is to the south of the former HWPW facilities. The Englewood Intermodal Yard is used for the transfer of box containers from rail cars to truck trailers and vice-versa. UPRR mainline rail and siding rails lie between the former HWPW and the Englewood Intermodal Yard. The Site will remain commercial/industrial for the foreseeable future. The Site was first developed for creosoting operations in 1899, and operated various creosoting operations until 1984 when operations ceased. The facility was dismantled in the early 1990s. Details of the history and previous operations at the Site have been discussed in detail in the previously submitted Affected Property Assessment Report (APAR) (ERM, 2000) and Revised APAR (ERM, 2004), as well as the RCRA Facility Assessment (RFA) Report (PRC, 1993).

The surrounding properties within a 500-foot radius of the Site, including the Englewood Intermodal Yard, consist of residential to the northwest, north, southeast, and south. The UPRR Englewood Classification Yard, commercial/industrial property, is located to the east of the Site. An area of undeveloped land and abandoned houses are located west of the Site. The 500-foot radius field survey demonstrated no current potential groundwater receptors within the residential neighborhood. No water wells, water tanks, cisterns, or windmills, or surface water bodies were encountered. The nearest surface water body is Buffalo Bayou, located approximately 1.6 miles southwest of the Site. The potential for lateral migration of groundwater from the Site to the southwest approximately 8,500 feet to Buffalo Bayou is not likely.

Assessment Results

The initial APAR prepared for the Site was submitted to the TCEQ dated June10, 2000 (ERM, 2000). A revised APAR was submitted to the TCEQ dated June 10, 2004. Pastor, Behling & Wheeler, LLC (PBW) prepared the APAR Addendum dated July 2009 (PBW, 2009). Following comments from the TCEQ, PBW submitted the Updated APAR Addendum dated October 2010, with response to comments dated March 29, 2011. The TCEQ approved the APAR in a letter dated April 13, 2011.

As detailed in the APARs and subsequent submittal, the Affected Property consists of surface soils, subsurface soils, and groundwater affected by chemical of concern (COC) at the Site: The soil and groundwater exposure pathways were evaluated as part of the Site assessments are considered to be complete and/or anticipated to be complete.

Site stratigraphy from the ground surface to a depth of approximately 135 feet is separated into the following units: Fill Material (0 to5 feet thick), A-Cohesive Zone (A-CZ) (8 to 15 feet thick); A-Transmissive Zone (A-TZ) (4 to 21 feet thick); B-Cohesive Zone (B-CZ) (6 to 19 feet thick); B-Transmissive Zone (B-TZ) (discontinuous, where present, 3 to 10 feet thick); C-Cohesive Zone (C-CZ)

(8 to 20 feet thick); C-Transmissive Zone (C-TZ) (10 to 13 feet thick); D-Cohesive Zone (D-CZ) (17 to 36 feet thick); and D-Transmissive Zone (D-TZ).

As detailed in the Updated APAR Addendum (PBW, 2010), target COCs in soil and groundwater media were evaluated using the March 2010 TCEQ TRRP Residential PCLs, or Residential Assessment Levels (RALs) to establish the Affected Property. Surface and subsurface soil data collected from 1997 through June 2010, with subsequent sampling in 2013 and 2014, were evaluated to assess the Affected Property and Protective Concentration Level (PCL) Exceedance (PCLE) Zone in surface and subsurface soils. Groundwater data from the most recent sampling event (July/August 2014) were evaluated to assess COC exceedances in groundwater.

PCLE Zones

Soils

The soil critical PCLs were established for the Site by using the lower commercial/industrial PCLs for on-site soils and residential PCLs for off-site soils for the following pathways:

- $^{Tot}Soil_{Comb}$ (Tier 1);
- $^{Air}Soil_{Inh\text{-}V}$ (Tier 1); and
- $^{GW}Soil_{Ing}$ (Tier 1 or 2).

Although the former wood preserving works portion of the Site is partially covered with crushed gravel and soil, the $^{Tot}Soil_{Comb}$ pathway was evaluated as potentially complete since potential future construction activities could occur at the Site. Most of the Englewood Intermodal Yard has a concrete pavement cover, and the rail area between the HWPW and the Englewood Intermodal Yard is covered with railroad ballast, which both prevents exposure to surface and subsurface soils in the area.

Comparing the surface and subsurface soil analytical data to the appropriate critical PCLs, concentrations of 15 COCs exceeded their respective critical PCLs:

Surface Soils

- 1,2-Diphenylhydrazine
- 2,4-Dinitrotoluene
- 2-Methylnaphthalene
- Benzene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Dibenzofuran
- Naphthalene
- Pentachlorophenol
- Arsenic
- Lead

Subsurface Soils

- 2-Methylnaphthalene
- Benzene
- Naphthalene
- Pentachlorophenol

The surface soil PCLE zone extends across the Original Process Area (SWMU 5) and Recent Process Area (SWMU 4), down the South Drainage Ditch (SDD) (SWMU 2), and across the Former Inactive Wastewater Lagoon (AOC 6). The PCLE zone was primarily defined by the concentrations of benzo(a)anthracene, benzo(a)pyrene, naphthalene, and pentachlorophenol in surface soils. Additional soil sampling conducted in 2013 indicates that the surface soil PCLE Zone extends into the Englewood Intermodal Yard. Additional soil sampling in 2014 indicated that the surface soil PCLE Zone

(benzo(a)pyrene and pentachlorophenol) extended north beyond the fence to the edge of Liberty Road, but was delineated along the northeast side of the Site. Arsenic and lead were detected at concentrations greater than cPCLs in surface soil in the Englewood Intermodal Yard.

For subsurface soils, the PCLE zones for 2-methylnaphthalene, naphthalene (more mobile COCs in soils), and pentachlorophenol were extrapolated using available subsurface soil data and applying the surface PCLE zone for those two COCs to the subsurface. By using the surface PCLE zone, this assumes the PCLE zone extends from the surface to the top of the uppermost GWBU (i.e. A-TZ). However for pentachlorophenol, none of the groundwater samples from A-TZ wells collected during the July/August 2014 groundwater monitoring event had detected pentachlorophenol concentrations above the RAL, suggesting the concentrations in surface and subsurface soils are protective of groundwater. The subsurface PCLE zone is confined to the area around the Original and Recent Process Areas (SWMUs 4 and 5), with a small area of naphthalene subsoil PCLE Zone in the Englewood Intermodal Yard area.

Groundwater

A total of 106 groundwater monitoring wells have been installed on and off-site in the GWBUs A-TZ, B-CZ/B-TZ, C-TZ, and D-TZ. Groundwater in A-TZ and B-TZ generally flows across the Site to the east; groundwater flow in the C-TZ flows from northeast to southwest, and groundwater flow in the D-TZ appears to flow to the northwest.

Based on the maximum groundwater analytical data from the July/August 2014 groundwater sampling event, concentrations of the following 23 target COCs exceeded their respective RALs where detected or had a SDL greater than the cPCL (>SDL) for COCs with no detections:

<u>VOCs</u>

- Benzene (A-TZ, B-TZ, C-TZ)
- Ethylbenzene (B-CZ only)
- Methylene Chloride (A-TZ, B-TZ/B-CZ, & C-TZ)
- Toluene (B-CZ only)
- Vinyl Chloride (A-TZ and B-TZ)

<u>SVOCs</u>

- 2,4-Dimethylphenol (A-TZ, B-TZ, C-TZ)
- 2,6-Dinitrotoluene (B-TZ & C-TZ)
- 2-Methylnaphthalene (A-TZ, B-CZ/B-TZ, & C-TZ)
- Acenaphthene (C-TZ only, one well*)
- Anthracene (C-TZ only, one well*)
- Benzo(a)anthracene (A-TZ, B-CZ, & C-TZ)
- Benzo(a)pyrene (A-TZ, C-TZ, and D-TZ)
- Bis(2-chloroethoxy)methane (A-TZ & C-TZ*)
- Chlorobenzene (A-TZ only, one well)
- Chrysene (C-TZ only, one well*)
- Dibenzofuran (A-TZ, B-CZ/B-TZ, & C-TZ)
- Fluoranthene (C-TZ only, one well*)
- Fluorene (C-TZ only, one well*)
- Naphthalene (A-TZ, B-CZ/B-TZ, & C-TZ)
- Pentachlorophenol (C-TZ)
- Phenanthrene (C-TZ only, one well*)
- Phenol (A-TZ, B-CZ, & C-TZ)
- Pyrene (C-TZ only, one well*)

* - COC only detected in wells with DNAPL present

As noted above, SVOCs acenaphthalene, anthracene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene were detected above cPCLs in only one well, MW-23C, which contained dense nonaqueous phase liquids (DNAPL) during the sampling event. These concentrations may overestimate the dissolved fraction in the groundwater; however, these COCs were included in the PCLE COC list.

The location and extent of the groundwater PCLE zones were determined by COCs present in groundwater at concentrations that exceed the critical PCL ($^{GW}GW_{ing}$) using the most recent groundwater data. Groundwater PCLE Zones were mapped for the three upper GWBUs: A-TZ, B-CZ/B-TZ, and C-TZ. One COC benzo(a)pyrene has been detected in the D-TZ GWBU during the most recent groundwater sampling event. A resample from the well confirmed the initial result. UPRR will evaluate further investigation of the D-TZ following the next sampling event.

No affected or threatened receptors are associated with the groundwater PCLE zone. Groundwater supply wells are not located in the affected area and drinking water in the area is provided by a municipal water supply (City of Houston).

Creosote DNAPL has been detected in the GWBUs A-TZ, B-CZ, B-TZ, and C-TZ as noted in soil borings and monitoring wells. The sources of DNAPL observed at the Site are likely from spills and drippings at the Site over the 80+ years of wood treating operations, with most of the releases likely occurring prior to 1984. The wood treating facility was shut down and dismantled in the early 1990s; thus, the DNAPL sources were removed over 20 years ago. UPRR completed a DNAPL Recovery Pilot Study for 24 months ending January 2015 to evaluate the effectiveness of DNAPL recovery through monthly DNAPL pumping events for 24 months. The results of the pilot test indicated that monthly DNAPL recovery activities are effective with DNAPL recovery and with overall DNAPL thicknesses either decreasing or becoming stable in the wells.

Response Action Plan

The objective of this RAP is to develop responses to protect current and future pathways from exposure to the PCLE Zones in surface soil, subsurface soil, and groundwater. The following response actions are proposed at the Site to achieve this objective:

- Surface/subsurface soil – The surface/subsurface soil PCLE Zones at the Site will be addressed as follows:
    1) Former HWPW Area: Remedy Standard B closure through consolidating impacted soils within the Area of Contamination (AOC) and implementing Physical Control through an engineered soil cap and asphalt roadway. Periodic inspections and maintenance of the cap and roadway will be implemented;
    2) Englewood Intermodal Yard: Remedy Standard B closure by implementing Physical Control using the existing concrete pavement as a cap. Periodic inspections and maintenance of the cap will be implemented;
    3) Railroad mainlines and siding tracks: The response action for the operational area between the Former HWPW area and the Englewood Intermodal Yard will be Remedy Standard B closure using the existing railroad ballast as a protective barrier.
    4) City of Houston ROW along Liberty Road: Remedy Standard B closure through limited excavation of surface soils, consolidating impacted soils within the AOC, and implementing Physical Control through an engineered concrete sidewalk. Periodic inspections and maintenance of the cap and roadway will be implemented.

- Groundwater – Remedy Standard B closure using a Plume Management Zone (PMZ) with monitored natural attenuation (MNA) for control as the response action for the groundwater

RAP Executive Summary	ID No.: SWR No. 31547
	Report Date: December 7, 2015 - Rev 1

PCLE Zones within the Affected Property. For the purposes of this RAP submittal, there will be four PMZ areas:

1) On-Site PMZ (Main) - The on-site PMZ (Main) will include the cumulative groundwater PCLE Zone within the UPRR-owned property from the center to the east portion of the Site.
2) On-Site PMZ (West) - The on-site PMZ (West) will include the B-CZ/B-TZ PCLE Zone on the west side of the Site within the UPRR-owned property.
3) Off-Site PMZ - The off-site PMZ includes the cumulative groundwater PCLE Zone that extends off-site to the north of the Site, but not including City of Houston ROW. The proposed off-site PMZ will require institutional controls for up to 88 individual properties.
4) Off-Site PMZ City of Houston ROW - The off-site PMZ includes the cumulative groundwater PCLE Zone that extends off-site to the north of the Site within the City of Houston ROW.

In addition, areas where DNAPL was noted will be proposed for control under a Technical Impracticability (TI) Demonstration per 30 TAC §350.33(f). Groundwater monitoring is proposed to be performed as part of the PMZ to confirm that the lateral extent of COC concentrations greater than their respective cPCLs continue to remain within the boundaries of the PMZ. Groundwater monitoring will be initiated for both the On-Site PMZs and Off-Site PMZs following approval of the RAP. During the acquisition of landowner consent for the off-site PMZ, groundwater monitoring will be conducted concurrently with the on-site PMZ monitoring requirements. DNAPL will be recovered from wells on a periodic basis through pumping to recover the readily recoverable NAPL for the GWBUs to satisfy requirements of the "no growth" PMZ and TI Zone.

What is the selected remedy standard for this affected property? ___ A **X** B

List all media that contains a PCLE zone and specify the proposed response action for each media. Indicate the type of removal, decontamination, physical control and/or institutional control action that is proposed.

Media	COCs[1]	Removal	Decontamination	Control			
				Physical Control	Modified Groundwater Response Objective[2]		
					PMZ	WCU	TI
Surface Soil	**Benzene, SVOCs, metals**			**X**			
Subsurface Soil	**SVOCs**			**X**			
Groundwater	**Benzene, SVOCs**				**X**		**X**

Is there a media that contains a PCLE zone that is not addressed in this RAP? ___ yes **X** no

[1] Specify either a specific COC or, if the response action is the same for all COCs in one type, specify the type of COC (for example, VOCs, SVOCs, metals).
[2] If a modified groundwater response objective is proposed, check the type(s) of proposed modifications.

RAP Executive Summary	ID No.: SWR No. 31547
	Report Date: December 7, 2015 - Rev 1

If yes, provide justification for not addressing the PCLE zone in this RAP.

On-site land use:	[ ]	Residential	[X]	Commercial/Industrial
Off-site land use:	[X]	Residential	[X]	Commercial/Industrial (check all that apply)

Is this a re-submittal or revision of a previous RAP? **X** Yes ___ No

If yes, explain why the RAP is being revised or resubmitted.

This RAP is being submitted with revisions based on the TCEQ Technical Notice of Deficiencies (NOD) dated August 5, 2015 on the UPRR Houston Wood Preserving Works Permit Renewal/Compliance Plan with Major Amendment, Permit/Compliance Number 50343, ISWR 31547.

Were all the appropriate notifications made in accordance with §350.55? **X** Yes ___ No

If no, explain why notifications were not made:

CHRONOLOGY

Below is a summary of the site investigation and regulatory chronology at the UPRR Former Houston Wood Preserving Works facility (listed in reverse order).

Date	Description
November 2015	Union Pacific Railroad (UPRR) receives the Texas Commission on Environmental Quality (TCEQ) letter dated November 5, 2015 detailing the agency's review of the September 18, 2015 submittal titled Additional Information for Clean Closure Equivalence Demonstration. The TCEQ Industrial and Hazardous Waste (I&HW) Permits Section was unable to accept the request for discontinuing post-closure care of the former surface impoundment, Solid Waste Management Unit (SWMU) 1.
November 2015	Meeting with UPRR, Pastor, Behling & Wheeler (PBW), and the TCEQ on November 4, 2015 discussing the October 23, 2015 technical comment letter from the TCEQ.
October 2015	UPRR receives additional technical comments from the TCEQ in a letter dated October 23, 2015 on the Response Action Plan (RAP) regarding the Plume Management Zones and Technical Impracticability Demonstration provided in the Response Action Plan.
September 2015	PBW submits to the TCEQ the Additional Information for Clean Closure Equivalence Demonstration dated September 18, 2015 that included historical data and letters from 1983, 1984, and 1991 to demonstrate clean closure of the soils under the former surface impoundment (SWMU 1). The letter also included a request to cease the post-closure care for SWMU 1.
August 2015	UPRR receives Technical Notice of Deficiency (NOD) Letter dated August 5, 2015 on the RCRA Part A and B Permit Renewal Application and Response Action Plan from the TCEQ.
July 2015	PBW submits to the TCEQ the Corrective Action Monitoring Report: 2015 First Semi-Annual Event dated July 16, 2015; PBW conducts 2015 second semi-annual groundwater monitoring event for the SWMU No. 1.
April 2015	PBW submits to the TCEQ newspaper tear sheets and affidavits that public notice was published in English and Spanish in the *Houston Chronicle* on April 2 and *La Subasta* on March 31, respectively as required once the RCRA Permit Renewal/Compliance Plan with Major Amendment was administratively complete.
March 2015	TCEQ issues a letter dated March 13, 2015 declaring the RCRA Permit Renewal/Compliance Plan with Major Amendment was administratively complete on March 13, 2015.

Date	Description
February 2015	PBW submits a response letter to the TCEQ dated February 13, 2015 for the TCEQ Administrative NOD on the RCRA Part A and B Permit Renewal Application.
January 2015	PBW submits to the TCEQ the Corrective Action Monitoring Report: 2014 Second Semi-Annual Event dated January 15, 2015; PBW conducts 2015 first semi-annual groundwater monitoring event for the SWMU No. 1.
December 2014	UPRR submits the RCRA Part A and B Permit Renewal Application with Response Action Plan (RAP) to the TCEQ dated December 10, 2014. UPRR receives the TCEQ Administrative NOD Letter dated December 17, 2014.
November 2014	RCRA Permit Pre-Application Meeting with UPRR, PBW, and TCEQ dated November 6, 2014.
September 2014	UPRR holds public meeting with residents near the Site to detail institutional controls for off-site groundwater Plume Management Zone (PMZ).
July/August 2014	PBW conducts site-wide groundwater sampling event.
May 2014	PBW oversees installation of seven new monitoring wells (MW-51C, MW-76C, MW-77A, MW-78A, MW-79A, MW-80B, and MW-81B) in the Englewood Intermodal Yard to evaluate DNAPL extent and extent of chemicals of concern (COCs) in the B-CZ unit to the southeast, and one replacement well MW-34CR to replace MW-34C. Soil samples also collected from City of Houston right of way (ROW) along north perimeter of the Site.
January 2014	PBW conducts site-wide groundwater sampling event.
July 2013	PBW conducts site-wide groundwater sampling event.
February/March 2013	PBW conducts cone penetrometer testing (CPT)/rapid optical screening tool (ROST) and soil investigation at the Englewood Intermodal Yard adjacent to the UPRR Houston Wood Preserving Works (HWPW) site.
January/February 2013	PBW conducts site-wide groundwater sampling event (95 wells). PBW submits Proposed DNAPL Recovery Pilot Test letter to TCEQ dated February 5, 2013, and initiates monthly DNAPL recovery from on-site and off-site wells (10-12 wells) (planned for 24 months).
November 2012	Meet with TCEQ regarding proposed CPT/ROST investigation of Englewood Intermodal Yard based on DNAPL detected from the December 2011 investigation.
July 2012	PBW conducts site-wide groundwater sampling event.
January 2012	PBW conducts site-wide groundwater sampling event.

Date	Description
July 2012	PBW conducts site-wide groundwater sampling event.
December 2011	PBW installs additional monitoring wells in the cohesive zone B-CZ to evaluate extent of DNAPL in the B-CZ.
July 2011	PBW conducts site-wide groundwater sampling event.
April 2011	TCEQ approves the Affected Property Assessment Report (APAR) (including updates and addendums).
March 2011	PBW submits the Revised Updated APAR Addendum to the TCEQ. UPRR repairs fence around site.
January 2011	PBW conducts site-wide groundwater sampling event.
December 2010/ January 2011	UPRR/PBW submits Off-Site Notification Letters to off-site properties indicating Notice of Information Availability for the site, as required with the submittal of the Updated APAR Addendum (Oct 2012) .
October 22, 2010	PBW submits the Updated APAR Addendum to the TCEQ.
June/July 2010	PBW conducts additional soil (along northeast portion of Site) and groundwater investigation (A-TZ, B-CZ, C-TZ and D-TZ wells); including site-wide groundwater monitoring event.
February 16, 2010	UPRR Response to TCEQ Comment Letter dated November 18, 2009.
January 2010	PBW conducts site-wide groundwater sampling event; selected wells are analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8620.
November 18, 2009	TCEQ Comment Letter on Revised APAR.
July 2009	PBW submits APAR Addendum to TCEQ.
January 2009	PBW conducts additional soil and groundwater investigation.
July 2008	PBW conducts additional CPT-ROST and groundwater investigation
January 2007	PBW conducts additional soil and groundwater investigation
August 2006	ERM-Southwest, Inc. (ERM) conducted additional soil and groundwater investigation
April 2006	ERM conducted additional soil and groundwater investigation
September 6, 2005	UPRR Response to TCEQ Response Letter dated August 1, 2005
August 2005	TCEQ Response to UPRR Response Letter dated June 9, 2005

Date	Description
June 9, 2005	UPRR Response to TCEQ Letter dated April 15, 2005
April 15, 2005	TCEQ Response to UPRR Response Letter dated November 19, 2004
November 19, 2004	UPRR Response to October 8, 2004 TCEQ Letter
October 8, 2004	TCEQ Comment Letter on Revised APAR
June 10, 2004	Revised APAR submitted to the TCEQ by ERM, Inc. on behalf of UPRR
November 7, 2001	Texas Natural Resources Conservation Commission (TNRCC) provides comments to July 5, 2001 response letter.
July 5, 2001	Follow-up response to November 6, 2000 TNRCC comment letter on the On-Site APAR submitted to TNRCC on behalf of UPRR.
January 9, 2001	Initial response to November 6, 2000 TNRCC comments.
November 6, 2000	TNRCC provides comments to On-Site APAR.
July 10, 2000	Affected Property Assessment Report for On-Site Property (On-Site APAR) submitted to TNRCC on behalf of UPRR by ERM.
February 20, 2000	Letter submitted to the TNRCC regarding proposed Phase 2-C investigation for further delineation of off-site areas
September 10, 1999	Phase 2-B RFI/EOC Investigation Report submitted to TNRCC on behalf of UPRR by ERM
April 27, 1998	Interim Stabilization Measures Report – Southern Drainage Ditch, submitted to TNRCC on behalf of UPRR by ERM.
February 13, 1998	Phase 2-A RFI/EOC Investigation Report submitted to TNRCC on behalf of UPRR by ERM.
January 13, 1997	RFI portion of the Phase 1 RFI/EOC Investigation Report approved by TNRCC
November 26, 1996	EOC portion of the Phase 1 RFI/EOC Investigation Report approved by TNRCC
May 23, 1996	Phase 1 RFI/EOC Report submitted on behalf of Southern Pacific Transportation Company (SPTCo) by Terranext
October 16, 1995	RFI Work Plan approved by TNRCC
September 29, 1995	EOC Work Plan approved by TNRCC
January 10, 1995	Operation and Maintenance Plan approved by TNRCC

Date	Description
November 3, 1994	Revised Compliance Schedule approved by TNRCC
October 14, 1994	RCRA Facility Investigation (RFI) Work Plan submitted on behalf of SPTCo
September 16, 1994	Extent of Contamination (EOC) Work Plan submitted on behalf of SPTCo
September 7, 1994	Revised Compliance Schedule submitted on behalf of SPTCo
August 19, 1994	Operation and Maintenance Plan and Compliance Schedule submitted on behalf of SPTCo
June 20, 1994	Permit No. HW-50343-000 and Compliance Plan CP-50343-000 issued by TNRCC.
October 1993	RCRA Facility Assessment completed on behalf of U.S. EPA by PRC Environmental Management, Inc.
May 13, 1991	RCRA Permit Application submitted by SPTCo

Note: Not all groundwater sampling events are listed in the chronology

Checklist for Report Completeness	ID No.: SWR ID 31547
	Report Date: December 7, 2015

Use this checklist to determine the portions of the form that must be submitted for this report. Answer all questions by checking Yes or No. If the answer is Yes include that portion of the report. If the answer is No, do not complete or submit that portion of the report. All form contents that are marked "Required" must be submitted. Form contents marked with an asterisk (*) are not included in the blank form and are to be provided by the person.

				Report Contents
		Required	**Cover Page**	☒
		Required	**Executive Summary**	☒
		Required	**Checklist for Report Completeness**	☒
		Required	**Worksheet 1.0** Response Action Objectives	☒
No ☐	Have new data been collected that was not previously submitted?	☒ Yes	**Attachment 1A*** Maps and Cross Sections	☒
			Attachment 1B* Graphs of Concentration versus Time	☐
		Required	**Worksheet 2.0** Response Action Design	☒
		Required	**Attachment 2A*** Response Action Diagrams and Component/Equipment Descriptions	☒
		Required	**Attachment 2B*** Proposed Well Design	☒
No ☒	Is an ecological services analysis or compensatory restoration plan part of the proposed response action?	☐ Yes	**Attachment 2C*** ESA and Compensatory Restoration Plan	☐
No ☐	Is a plume management zone proposed as part of the response action?	☒ Yes	**Worksheet 2.1** Plume Management Zone	☒
			Attachment 2D* Plume Management Zone Map	☒
			Attachment 2E* Attenuation Action Levels Determination	☒
No ☒	Is a waste control unit proposed as part of the response action?	☐ Yes	**Worksheet 2.2** Waste Control Unit	☐
			Attachment 2F* Map of Waste Control Unit	☐
No ☐	Is a technical impracticability area proposed as part of the response action?	☒ Yes	**Worksheet 2.3** Technical Impracticability	☒
			Attachment 2G* Map of Technical Impracticability Area	☒

Checklist for Report Completeness	ID No.: SWR ID 31547
	Report Date: December 7, 2015

				Report Contents
No ☐	Is the response action a remedy standard B?	☒ Yes →	**Worksheet 2.4** Institutional Controls	☒
		Required	**Worksheet 3.0** Performance Measures and Potential Problems	☒
		Required	**Worksheet 3.1** Monitoring and Sampling	☒
		Required	**Attachment 3A*** Map of Monitoring and Sampling Points	☒
		Required	**Worksheet 3.2** Operation and Maintenance	☒
		Required	**Worksheet 4.0** Confirmation Sampling Plan	☒
		Required	**Attachment 4A*** Map of Confirmation Sampling Points	☒
No ☐	Is the response action a Remedy Standard B?	☒ Yes →	**Worksheet 5.0** Post Response Action Care	☒
		→	**Attachment 5A*** Map of PRAC Monitoring and Sampling Points	☒
		→	**Attachment 5B*** PRAC Costs	☒
No ☒	Does the person, who is a small business, desire to modify the financial assurance requirement?	☐ Yes →	**Attachment 5C*** Small Business Affidavit	☐
		Required	**Worksheet 6.0** Implementation Schedule	☒
		Required	**Appendix 1*** References	☒
No ☐	Was any data collected that was not previously reported?	☒ Yes →	**Appendix 2*** Data Tables and Boring Logs	☒
No ☐	Were any studies or tests conducted?	☒ Yes →	**Appendix 3*** Studies and Tests Documentation	☒
No ☐	Is the response action a Remedy Standard B?	☒ Yes →	**Appendix 4*** Proposed Institutional Controls	☒
No ☐	Are any institutional controls proposed/required on property not owned by the person?	☒ Yes →	**Appendix 5*** Landowner Concurrence	☒
No ☐	Are any of the sample collection or handling procedures different from those reporting in the APAR or other previously submitted report?	☒ Yes →	**Appendix 6*** Sampling Procedures	☒
No ☐	Are statistics or geostatistics proposed to be used as part of the response action?	☒ Yes →	**Appendix 7*** Statistical Methodology	☒
No ☒	Was approval received from the TCEQ regarding the use of different rules to address a media?	☐ Yes →	**Appendix 8*** Split Media Approval	☐

Form contents marked with an asterisk (*) are not included in the blank form.

Response Action Objectives Associated Information: Attachment 1A, 1B	RAP Worksheet 1.0 Page 1 of 9	
	ID No.: SWR ID 31547	Report Date: December 7, 2015 - Rev 1

Use this worksheet to describe the objectives for the response action in each media.

Response Action Objectives

List the environmental media to which this applies: **Surface Soils (0 – 5 feet bgs)/Subsurface Soils (>5 feet bgs)**

Repeat this section for each medium that has a different response action objective.

State the property-specific response objectives for the PCLE zone in each media in the context of the response objectives set forth in §350.32 or §350.33 as applicable. Explain how the response action is appropriate based on the hydrogeologic characteristics, COC characteristics, and potential unprotective conditions that could continue or result during the remedial period.

The Response Action Objectives (RAO) for the surface and subsurface soil PCLE Zones is to control exposure through physical barriers such that commercial/industrial workers will not be exposed to concentrations of COCs in excess of the critical human health PCLs (§350.33(a)(1)). The surface soil PCLE zone extends across the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), Water Treatment and Boiler System (SWMU 6), Aboveground Storage Tank Area (SWMU 8), Oil/Water Separators (SWMU 11), down the Southern Drainage Ditch (SDD) (SWMU 2), and across the Former Inactive Wastewater Lagoon (Area of Concern (AOC) 6). The surface soil PCLE Zone also extends north of the Site onto the City of Houston right of way (ROW) and south across the UPRR main lines and into the Englewood Intermodal Yard (Attachment 1A-Figure 4A).

Three key approaches will be implemented to protect commercial/industrial workers from exposure to COCs in surface and subsurface soils:

- Former HWPW area: Using the Area of Contamination (AOC) approach, surface soils with cPCL exceedances in the Inactive Wastewater Lagoon (AOC 6), and areas north of the AST Area (SWMU No. 8) will be consolidated in the area of SWMUs 4, 5, and 8. This area will then be covered with a vegetated soil cap to prevent human exposure to the impacted soils. The surface soil PCLE zone along the SDD (SWMU No. 2) will be capped in place using asphalt cover as part of a roadway improvement.

- Englewood Intermodal Yard area: The surface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact and exposure.

- UPRR Main Lines Ballast Area: UPRR proposes to use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area.

To address potential exposure to surface soil PCLE Zone off-Site, the following will be implemented to protect residents (i.e. occasional trespasser) from exposure to COCs in surface and subsurface soils:

- City of Houston Right of Way (ROW): The area immediately north of the AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road (approximately 6 feet wide and 550 feet long) will be addressed through a combination of soil excavation (to be placed within the capped area) and construction of a concrete sidewalk to restrict exposure to the surface soil PCLE zone.

The Affected Property (including the entire Site (HWPW and Englewood Intermodal Yard)) will also be deed restricted for commercial-industrial land use, for the use of physical controls on surface and subsurface soil, and restrictions on soil excavation within the surface and subsurface soil PCLE Zone in accordance with §350.31(g).

Explain how the COCs will be handled, treated, disposed, or transferred to another media and document that the response action will not result in any additional potential exposure conditions due to response action activities.

Surface soils from parts of AOCs 6 and 7 and SWMU Nos. 7 and 11 will be excavated and consolidated within the Area of Contamination (Affected Property) within the former HWPW area. During consolidation activities, Site workers will operate under a site-specific health and safety plan (HASP) and impacted soils will be consolidated within the surface soil Affected Property. Any equipment and tooling that comes in contact with impacted soils will be decontaminated and managed within the AOC. Storm water protection (i.e., Storm Water Pollution Prevention Plan (SWPPP), silt fencing) and fugitive dust monitoring will be conducted during remediation activities to ensure the activities will not result in additional exposure conditions. Verification sampling will be performed at the excavation areas following excavation of soils to ensure that the affected soils containing COCs at concentrations in excess of the applicable cPCLs have been removed. Upon completion of verification sampling, the excavation area will be restored by backfilling with clean fill and/or grading.

During construction of the cap, storm water management and dust monitoring will also be conducted to minimize impacting soils outside of the Affected Property during the response action.

For areas outside of the proposed excavation, COCs in soil will be left in place at the Site and exposure will be controlled by the use of institutional controls (commercial/industrial land use) and the use of physical barriers (engineered soil cap and asphalt roadway cap for the former HWPW area and concrete and railroad ballast for the Englewood Intermodal Yard).

State the proposed "reasonable time frame" and provide the justification for that time frame in the context of any potential for unprotective exposures to exist or develop, COC characteristics, hydrogeologic and affected property characteristics. If the reasonable time frame is different for the different affected media or for particular tracts of land, be sure to discuss that. Provide how the proposed response action will meet the objectives in a reasonable timeframe.

Based on preliminary approval from the TCEQ through meeting with Corrective Action Division (on November 4, 2015), UPRR began the bidding process in November 2015 for identifying the contractor to conduct the proposed response action, including the consolidation within the Area of Contamination, construction of the asphalt roadway cap, and off-site concrete sidewalk (details provided in Worksheet 2.0). It is anticipated that the response actions will be initiated in January 2016 and completed within 180 days.

For the Englewood Intermodal Yard, soils will be left in place. A physical barrier (concrete and railroad ballast/ties/rail) is already in place to prevent exposure to surface soil in that area.

For the entire Affected Property, deed restriction of the Site to commercial-industrial use will also be implemented to prevent future exposure risk. The deed notice will be filed with the Harris County

Clerk upon approval of the RAP. In accordance with the TCEQ regulatory guidance document *Institutional Controls Under TRRP* (RG-366/TRRP-16), proof of filing would be submitted to the TCEQ within 120 days of approval of the RAP. An example deed notice for the UPRR property is included in Appendix 4.

List the environmental media to which this applies **Groundwater**

Repeat this section for each medium that has a different response action objective.

State the property-specific response objectives for the PCLE zone in each media in the context of the response objectives set forth in §350.32 or §350.33 as applicable. Explain how the response action is appropriate based on the hydrogeologic characteristics, COC characteristics, and potential unprotective conditions that could continue or result during the remedial period.

The RAO to address the PCLE Zone in groundwater will be through control using a modified groundwater response objective through a plume management zone (PMZ) and Technical Impracticability (TI) Zone. Per §350.33, a PMZ is proposed for the Site for the three GWBUs: A-TZ, B-CZ/B-TZ, and C-TZ, with monitored natural attenuation (MNA) as the groundwater control to meet PCLs at points of exposure (POEs) for all three GWBUs. For the purposes of this RAP submittal, the overall PMZ consists of the following four separate PMZs:

1. On-Site PMZ (Main) – The on-site PMZ (Main) will include the cumulative groundwater PCLE Zone within the UPRR-owned property from the center to the east portion of the Site.
2. On-Site PMZ (West) – The on-site PMZ (West) will include the B-CZ/B-TZ PCLE Zone on the west side of the Site within the UPRR-owned property.
3. Off-Site PMZ – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site, but not including land designated as City of Houston ROW. The proposed off-site PMZ will require institutional controls for up to 88 individual properties.
4. Off-Site PMZ City of Houston ROW – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site within the land designated as City of Houston ROW.

The on-site PMZs (Main and West), including the former HWPW and Englewood Intermodal Yard will be deed restricted to commercial-industrial land use and to restrict future use of groundwater on-site, as well as restrictions on soil excavation activities within the surface soil PCLE Zone on the UPRR-owned property. UPRR has proposed to file restrictive covenants with the Harris County Clerk for the off-site properties (88 off-site properties) within the proposed cumulative PMZ (includes the three individual PMZs for the A-TZ, B-CZ.B-TZ, and C-TZ GWBUs). For the off-site PMZs (88 off-site properties and City of Houston ROW), UPRR has acquired landowner consent for 52 of the off-Site properties through the restrict covenant to establish the PMZ on properties not owned by UPRR. An extensive and diligent inquiry has been conducted to locate the landowners for the remaining 36 properties, as detailed in Appendix 5.

UPRR proposes a TI demonstration (Worksheet 2.3) for GWBUs where DNAPL has been observed (i.e., in soil borings and/or monitoring wells in the A-TZ, B-CZ/B-TZ, and C-TZ) per §350.33 (f) for both the on-site property and off-site properties.

To address the NAPL, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be addressed through control via TI. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells, the TI demonstration details the difficulty of achieving groundwater PCLs in these areas because of complex hydrogeology and physical nature of creosote (discussed in Worksheet 2.3). The control

endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include physical recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) or natural means (natural source zone depletion through biodegradation) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met.

Therefore, the current response objective per the TCEQ Guidance is to ensure compliance of NAPL zone in the overall PMZ. With the PMZs and TIs established, the response objectives will include compliance with PMZ performance criteria at the NAPL zone through control via TI and institutional controls (UPRR-owned property and off-site properties/City of Houston ROW) on groundwater use to protect exposure to residual NAPL and COCs in the GWBUs. As part of the evaluation for compliance with PMZ performance criteria, UPRR will continue the DNAPL recovery activities on a monthly basis, and will evaluate the effectiveness annually.

Explain how the COCs will be handled, treated, disposed, or transferred to another media and document that the response action will not result in any additional potential exposure conditions due to response action activities.

Groundwater will be sampled from the selected monitoring wells on a semi-annual basis, and purge water from sampling events will be drummed for proper disposal (waste stream currently on the Notice of Registration (NOR)), stored within the Container Storage Area (CSA) (Unit 4 on the NOR), and disposed of in accordance with state and federal regulations and requirements.

Recovered creosote DNAPL from the Corrective Action System Wells will be managed at the Site in containers (i.e. drums) within the CSA. In accordance with the RCRA Permit and Compliance Plan, recovered DNAPL will be stored in the CSA, then transported and disposed of in accordance with state and federal requirements within the required timeframes.

State the proposed "reasonable time frame" and provide the justification for that time frame in the context of any potential for unprotective exposures to exist or develop, COC characteristics, hydrogeologic and affected property characteristics. If the reasonable time frame is different for the different affected media or for particular tracts of land, be sure to discuss that. Provide how the proposed response action will meet the objectives in a reasonable timeframe.

For the groundwater Remedy Standard B, the proposed response action (MNA) is currently occurring at the Site. There are no potential or unprotected exposures at the Site for groundwater since none of the properties in the area use groundwater for drinking or any other purposes; and the properties are provided drinking water by the City of Houston. None of the City of Houston groundwater supply wells are in the area of the Site. In addition, no groundwater drinking wells have been identified in the area and anticipated future use of the shallow groundwater as resource is unlikely.

A review of groundwater data for the Site indicates that COC concentrations in the three GWBUs are mostly stable or decreasing at the downgradient edges at the Site (Mann-Kendall trend analysis – Attachment 2E), supporting the use of the PMZ for the groundwater PCLE Zones. With the complex hydrogeology and the nature of the creosote contamination where DNAPL has been observed, portions

of the groundwater PCLE Zones are proposed to be technically impracticable for groundwater restoration (Worksheet 2.3, Attachment 2G). Therefore, with the PMZ and TI Zones, no exposures to groundwater above cPCLs are expected, and furthermore, groundwater exposure in the area will be restricted through institutional controls.

Institutional controls through deed recordation (UPRR-owned property – on-site PMZs) and restrictive covenants (off-site properties – Off-Site PMZ/Off-Site PMZ City of Houston ROW) within the PMZ and restricting the use of groundwater will be used at the Site to prevent future exposure risk until groundwater concentrations achieve critical PCLs. The deed notice for the UPRR-owned property and restrictive covenants for off-site properties will be filed with the Harris County Clerk upon approval of the RAP. The deed restriction and restrictive covenants completed to date are included in Appendix 4. In accordance with the TCEQ regulatory guidance document *Institutional Controls Under TRRP* (RG-366/TRRP-16), proof of filing for the on-site PMZ will be submitted to the TCEQ within 120 days of approval of the RAP.

Landowners for some properties within the Off-Site PMZ were not locatable. In accordance with 30 TAC §350.111(c)(3), documentation of the extensive and diligent inquiry to locate those landowners are provided in Appendix 5. Following approval from the TCEQ Executive Director, deed notices on those properties will be placed detailing the Off-Site PMZ.

Soil Response Action Objectives

When using removal and/or decontamination with controls or controls only, demonstrate how that physical control or combination of measures will reliably contain COCs within and/or derived from the surface soil and subsurface soil PCLE zone materials over time.

As previously discussed, the RAOs for surface and subsurface soil PCLE Zones is to control exposure through Remedy Standard B using physical barriers such that on-site commercial/industrial and off-site residential pathways will not be exposed to concentrations of COCs in excess of the critical human health PCLs (§350.33(a)(1)). In addition, COC concentrations in the surface and subsurface soils will not create a leachate that will lead to cPCL exceedances at the alternate point of exposure wells within the proposed PMZ. Soil responses will be implemented differently depending on the location within the Site, with controls placed in the following areas:

- Former HWPW area: Once the surface soils with cPCL exceedances in the Inactive Wastewater Lagoon (AOC 6), near the Location of the Former Incinerator (AOC 4) surrounding the Tank Car Storage Area (SWMU 7) and Oil/Water Separators (SWMU 11), and areas north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5) and AST Area (SWMU 8) are consolidated within the area of SWMUs 4, 5, and 8 under the Area of Contamination policy, a vapor barrier with geotextile fabric, and an engineered soil cap will be constructed to cover the consolidated soil and remaining surface soil PCLE Zone on the former wood treating works area to contain and prevent exposure to COCs within the soil PCLE Zone at the Site. The soil cap will be vegetated and sloped to minimize infiltration to control potential leachate migration from the surface and subsurface soils to the GWBUs. The surface soil PCLE zone along the SDD (SWMU No. 2) will be capped in place using asphalt cover as part of a roadway improvement. The soil cap and asphalt cap will be maintained under the post-response action care period. In these areas where surface soils will be removed, subsurface soils do not appear to be impacted above cPCLs. The subsurface soil PCLE Zone is

within the areas where the proposed engineered soil cap will be constructed. Therefore, there will be no exposure to subsurface soils as well.

- City of Houston ROW: The area immediately north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), and AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road (approximately 6 feet wide and 550 feet long) will be addressed through a combination of soil excavation (to be placed within the capped area discussed above) of the top 9-inches and construction of a physical barrier (concrete sidewalk) preventing contact with surface soils and infiltration. As part of the post-response action care, the concrete sidewalk in the area of the surface soil PCLE Zone will be inspected to ensure continued residential land use protection.

- Englewood Intermodal Yard area: The surface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact and infiltration. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be inspected to ensure continued on-site worker protection.

- UPRR Main Lines Ballast Area: The area between the former wood treating works area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. UPRR proposes to use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. Since this area is owned and controlled by UPRR, UPRR will implement a health and safety program to restrict any construction activity in the area of the railroad lines. In the event construction activities are necessary, a health and safety plan will be implemented to ensure worker protection from COCs in the surface soils.

For the approaches, the soil cap and asphalt roadway improvement will be maintained and appropriate maintenance, repair of the concrete sidewalk area north of the Site and concrete parking area in the Englewood Intermodal Yard will be performed as needed, and the railroad ballast will be maintained as part of the railroad operations.

The affected property will also be deed restricted to commercial-industrial land use and for the use of a physical control on surface soils in accordance with §350.31(g), including the City of Houston ROW.

Explain how the removal or decontamination action will reduce the concentration of COCs to the critical surface soil and subsurface soil PCL throughout the soil PCLE zone and prevent COC concentrations above the critical soil PCLs from migrating beyond the existing boundary of the soil PCLE zone.

In the areas where surface soils will be excavated, confirmation samples will be collected to confirm that the COC concentrations in the remaining soils will be below critical soil PCLs. Excavated surface soils will be consolidated within the area of SWMUs 4, 5, and 8 under the Area of Contamination policy, and an engineered soil cap will be constructed to cover the area to prevent exposure to and migration of COCs beyond the soil PCLE Zone.

Groundwater Response Action Objectives

Name of groundwater-bearing unit to which this information applies: **A-TZ, B-TZ/B-CZ, C-TZ – Uppermost Groundwater-Bearing Units**

Repeat this section for each groundwater-bearing unit for which a different response action is proposed.

Groundwater classification ____ 1 **X** 2 ___ 3

Is a modified groundwater response action being proposed for any part of the groundwater PCLE zone (§350.33(f)(2), (3), or (4))? **X** Yes ___ No

If yes, does the affected property meet the qualifying criteria for a modified groundwater response action using a waste control unit, plume management zone, or technical impracticability? **X** Yes ___ No

If yes, complete the appropriate portions of this report.

If no to either question, complete the following:

Explain how the removal or decontamination action will reduce the concentration of COCs to the critical groundwater PCL throughout the groundwater PCLE zone and prevent COC concentrations above the critical groundwater PCL from migrating beyond the existing boundary of the groundwater PCLE zone.

A modified Remedy Standard B groundwater RAO will be conducted at the Site through control using a PMZ and TI Zone. MNA is proposed as a control response to address the PCLE Zones within the PMZs. Within the TI Zone, the NAPL response endpoint for the creosote DNAPL will be through the control (via TI) endpoint. The response objective will be to control the creosote DNAPL by recovery (recovery from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met at the alternate POE wells.

Explain how the response action will prevent COCs from migrating to air at concentrations above the PCLs for air if the groundwater-to-air PCLs ($^{Air}GW_{Inh\text{-}V}$) is exceeded.

The groundwater-to-air PCLs ($^{Air}GW_{Inh\text{-}V}$) were not exceeded in any representative groundwater samples collected at the Site. Groundwater samples from wells with DNAPL present have had naphthalene concentrations detected at concentrations greater than the $^{Air}GW_{Inh\text{-}V}$ PCL; however, the samples were collected in the deeper GWBUs (i.e., B-TZ/B-CZ) where the overlying groundwater in the A-TZ had naphthalene concentrations below the $^{Air}GW_{Inh\text{-}V}$ PCL. Therefore, potential for vapor migration from groundwater is low.

Explain how the response action will prevent COCs from migrating to surface water at concentrations above the PCLs for groundwater discharges to surface water if surface water is a factor.

Groundwater discharges to surface water are not a concern at the Site and no further action is required.

Explain how the response action will prevent human and ecological receptor exposure to the groundwater PCLE zone.

There are no potential or unprotective human health exposures at the Site for groundwater since none of the properties in the area use groundwater for drinking; and the properties are provided drinking

water by the City of Houston. For the proposed response action, implementation of the PMZ and TI, and associated application of institutional controls, will also limit future use of shallow groundwater found within the PMZ.

In regards to ecological receptors, groundwater does not discharge to ground surface nor discharges to surface water. Therefore, there is not a complete or potentially complete pathway for ecological receptors.

ATTACHMENT 1A

ADDITIONAL SITE INVESTIGATION RESULTS

EXPLANATION

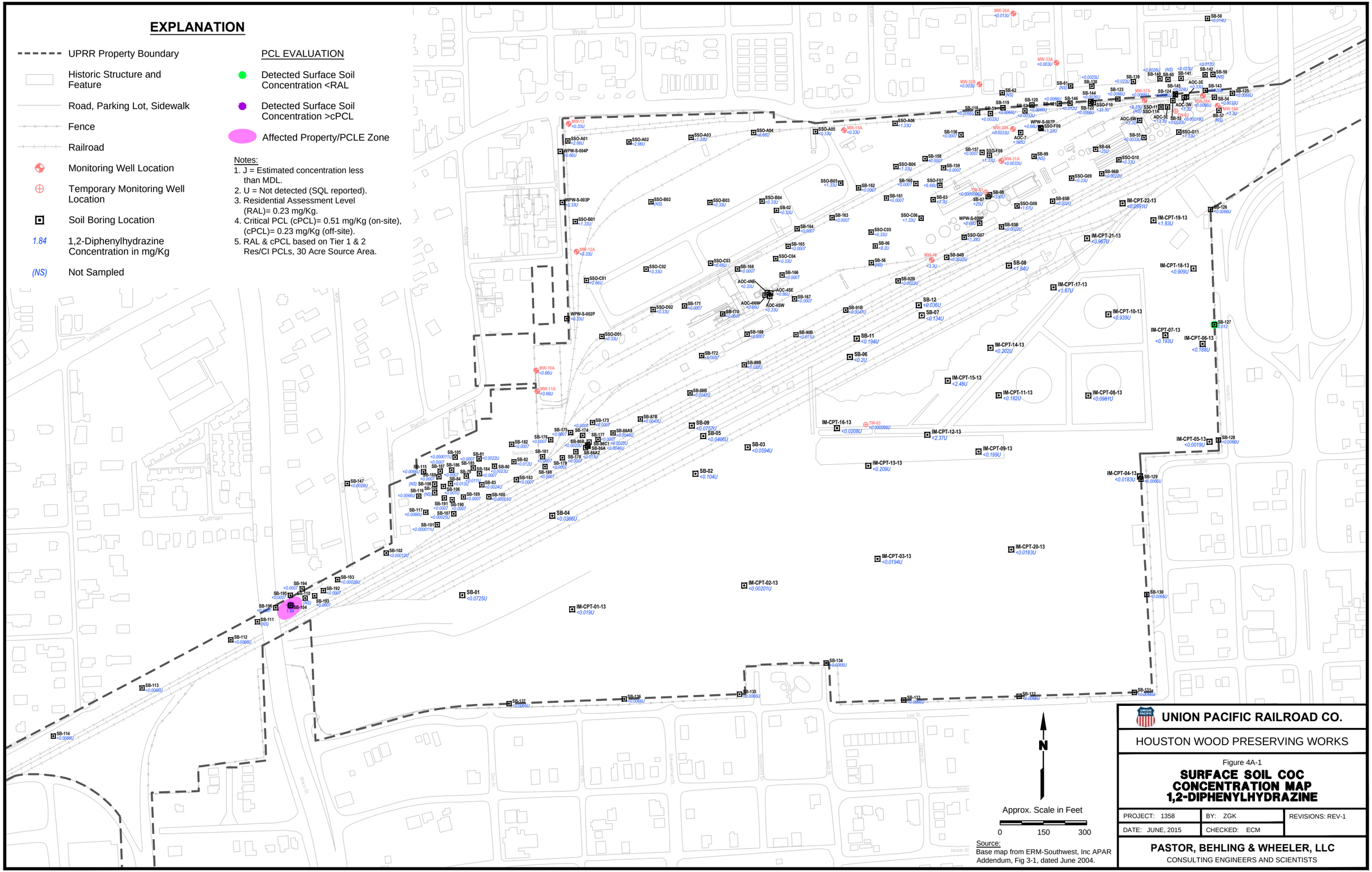
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 1.84 — 1,2-Diphenylhydrazine Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 0.23 mg/Kg.
4. Critical PCL (cPCL)= 0.51 mg/Kg (on-site), (cPCL)= 0.23 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.


Wylie
Liberty Road
Lawndale
Clearview
Courtney
Kirkley
Eden
Quitman
Kress
Lockwood
Baron
Wilson
Lee St
Southwest Fwy
Woodside
Sage St
Dacoma St
Noble St
Wilcrest
Hayes
Sutton
Kirkwood
Wilcrest St
SB-50 <0.0194U
MW-26A <0.013U
MW-33A <0.003U
MW-32A <0.003U
SB-62 (NS)
SB-61 (NS)
SB-139 <0.023U
SB-138 <0.0025U
SB-140 (NS)
SB-141 <0.023U
SB-59 (NS)
SB-142 <0.012U
SB-143 <0.0066U
SB-144 <0.0066U
SB-123 <0.0066U
SB-124 <0.0066U
SB-145 <0.0066U
AOC-3E <0.23U
SB-125 <0.0066U
SB-54 <0.0032U
MW-57A <0.0066U
SB-146 <0.0066U
SB-119 <0.0066U
SB-120 <0.0066U
SB-52 <0.0066U
SB-121 <0.0066U
SB-51 <0.0033U
SB-118 <0.0066U
SB-122 <0.0066U
SSO-F10 <3.3U
SSO-11 (NS)
SSO-11B <3.3U
AOC-3W <0.0066U
MW-13A <3.3U
AOC-5W <3.3U
AOC-5E <13.3U
SB-62 <0.0019U
SB-53 <0.0033U
SB-57 (NS)
SB-55 <0.0033U
SSO-G11 <3.3U
SB-64 <25U
SSO-G10 <3.3U
SB-96B <0.0022U
SSO-G09 <3.3U
SB-05B <0.022U
IM-CPT-22-13 <0.0951U
IM-CPT-19-13 <1.83U
IM-CPT-21-13 <0.967U
IM-CPT-18-13 <0.909U
IM-CPT-17-13 <1.67U
IM-CPT-10-13 <0.939U
IM-CPT-07-13 <0.193U
IM-CPT-06-13 <0.186U
SB-127 <0.012
SB-126 <0.0066U
SB-08 <1.84U
SB-93B <0.0022U
SB-94B <0.0022U
SSO-G08 <1.67U
SB-96 <3.3U
SB-97 <25U
TW-01 <0.000009U
WPW-S-006P <0.68U
SSO-G07 <1.33U
SSO-F09 <1.33U
WPW-S-007P <0.66U
SSO-F08 <1.33U
SB-99 (NS)
MW-31A <0.0033U
MW-30A <0.0033U
AOC-7 <165U
SSO-F07 <6.66U
SB-160 <0.0007
SB-159 <0.0007
SB-158 <0.0007
SB-156 <0.0007
SSO-A06 <1.33U
SSO-A05 <3.33U
MW-15A <0.33U
SSO-A04 <6.66U
SSO-A03 <1.33U
SSO-A02 <2.66U
SSO-A01 <2.66U
MW-13 <0.33U
WPW-S-004P <0.66U
SSO-B06 <1.33U
SSO-B05 <1.33U
SSO-B04 <0.33U
SSO-B03 <0.33U
SSO-B02 (NS)
WPW-S-003P <0.33U
SSO-B01 <1.33U
MW-12A <0.33U
SSO-C01 <2.66U
SSO-C02 <0.33U
SSO-C03 <6.66U
SSO-C04 <0.33U
SSO-C05 <0.33U
SSO-C06 <1.33U
SB-162 <0.0007
SB-161 <0.0007
SB-03 <3.3U
SB-163 <0.0007
SB-164 <0.0007
SB-165 <0.0007
SB-166 <0.0007
SB-167 <0.0007
SB-168 <0.0007
SB-06 <8.2U
SB-56 (NS)
SB-92B <0.0022U
MW-14 <3.3U
SB-12 <0.036U
SB-07 <0.134U
SB-91B <0.0047U
SB-11 <0.194U
SB-06 <0.2U
SB-90B <0.011U
SB-169 <0.0007
SB-171 <0.0007
SB-170 <0.0007
AOC-4NW <0.66U
AOC-4NE <0.33U
AOC-4SE <0.66U
AOC-4SW <0.33U
SSO-D02 <0.33U
SSO-D01 <0.33U
WPW-S-002P <0.33U
SB-172 <0.0007
SB-89B <0.022U
SB-88B <0.0042U
MW-10A <0.66U
MW-11A <0.66U
SB-87B <0.0043U
SB-09 <0.0757U
SB-05 <0.0406U
SB-03 <0.0594U
SB-02 <0.104U
SB-04 <0.0366U
SB-01 <0.0725U
IM-CPT-01-13 <0.019U
IM-CPT-02-13 <0.00201U
IM-CPT-03-13 <0.0194U
IM-CPT-20-13 <0.0183U
IM-CPT-14-13 <0.202U
IM-CPT-15-13 <2.48U
IM-CPT-11-13 <0.182U
IM-CPT-08-13 <0.0981U
IM-CPT-16-13 <0.0208U
TW-03 <0.000096U
IM-CPT-12-13 <2.37U
IM-CPT-09-13 <0.199U
IM-CPT-13-13 <0.209U
IM-CPT-04-13 <0.0183U
IM-CPT-05-13 <0.0079U
SB-128 <0.0066U
SB-129 <0.0066U
SB-130 <0.0066U
SB-131 <0.0066U
SB-132 <0.0066U
SB-133 <0.0066U
SB-134 <0.0066U
SB-135 <0.0066U
SB-136 <0.0066U
SB-137 <0.0066U
SB-138 <0.0066U
SB-139 <0.0066U
SB-140 <0.0066U
SB-141 <0.0066U
SB-142 <0.0066U
SB-143 <0.0066U
SB-144 <0.0066U
SB-145 <0.0066U
SB-146 <0.0066U
SB-147 <0.0028U
SB-148 <0.0066U
SB-149 <0.0066U
SB-150 <0.00001U
SB-151 <0.0066U
SB-152 <0.0066U
SB-153 <0.0066U
SB-154 <0.0066U
SB-155 <0.0066U
SB-156 <0.0066U
SB-157 <0.0066U
SB-158 <0.0066U
SB-159 <0.0066U
SB-160 <0.0066U
SB-161 <0.0066U
SB-162 <0.0066U
SB-163 <0.0066U
SB-164 <0.0066U
SB-165 <0.0066U
SB-166 <0.0066U
SB-167 <0.0066U
SB-168 <0.0066U
SB-169 <0.0066U
SB-170 <0.0066U

EXPLANATION

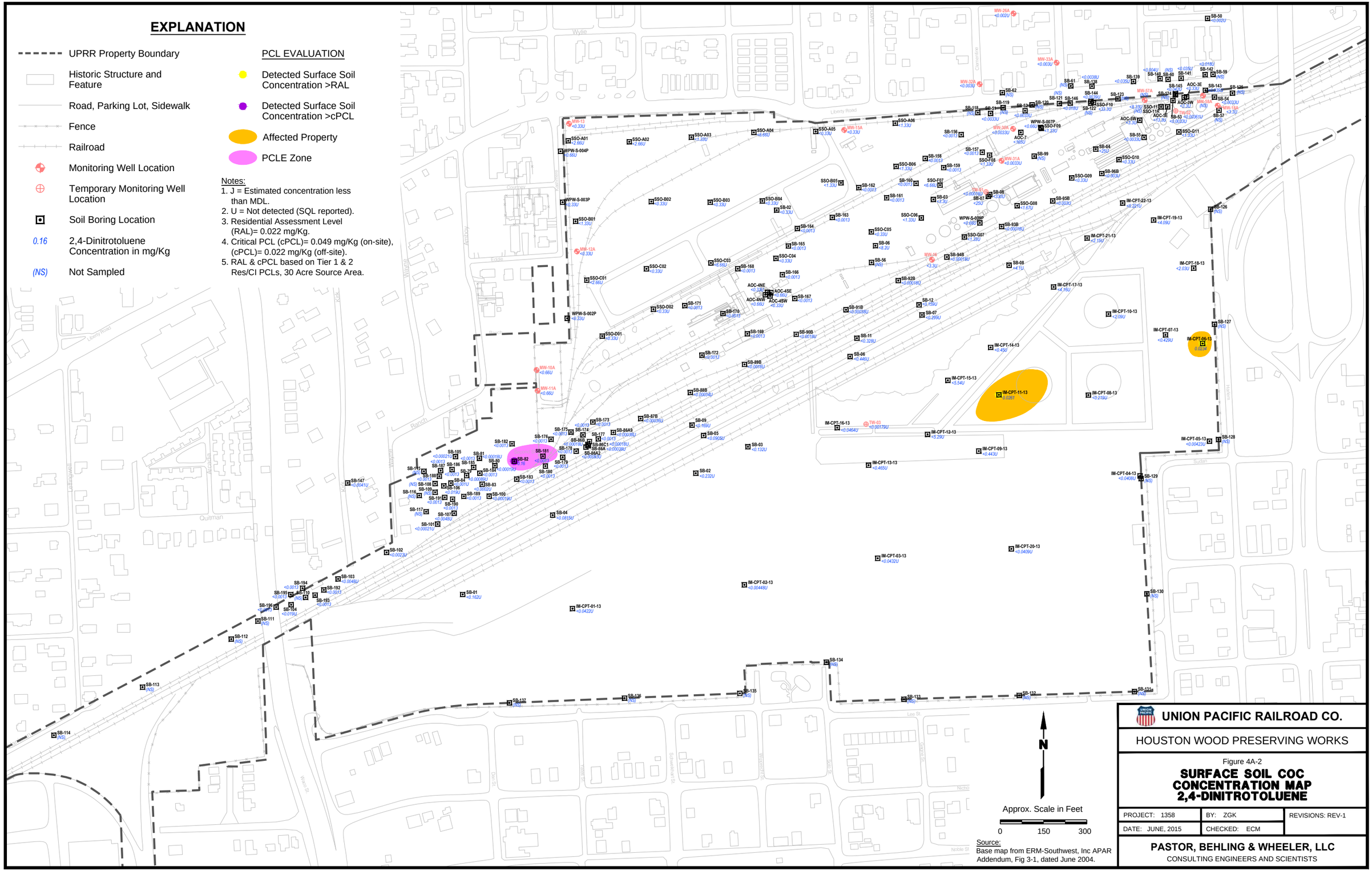
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 0.16 — 2,4-Dinitrotoluene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 0.022 mg/Kg.
4. Critical PCL (cPCL)= 0.049 mg/Kg (on-site), (cPCL)= 0.022 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-2

SURFACE SOIL COC CONCENTRATION MAP 2,4-DINITROTOLUENE

PROJECT: 1358	BY: ZGK	REVISIONS: REV-1
DATE: JUNE, 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

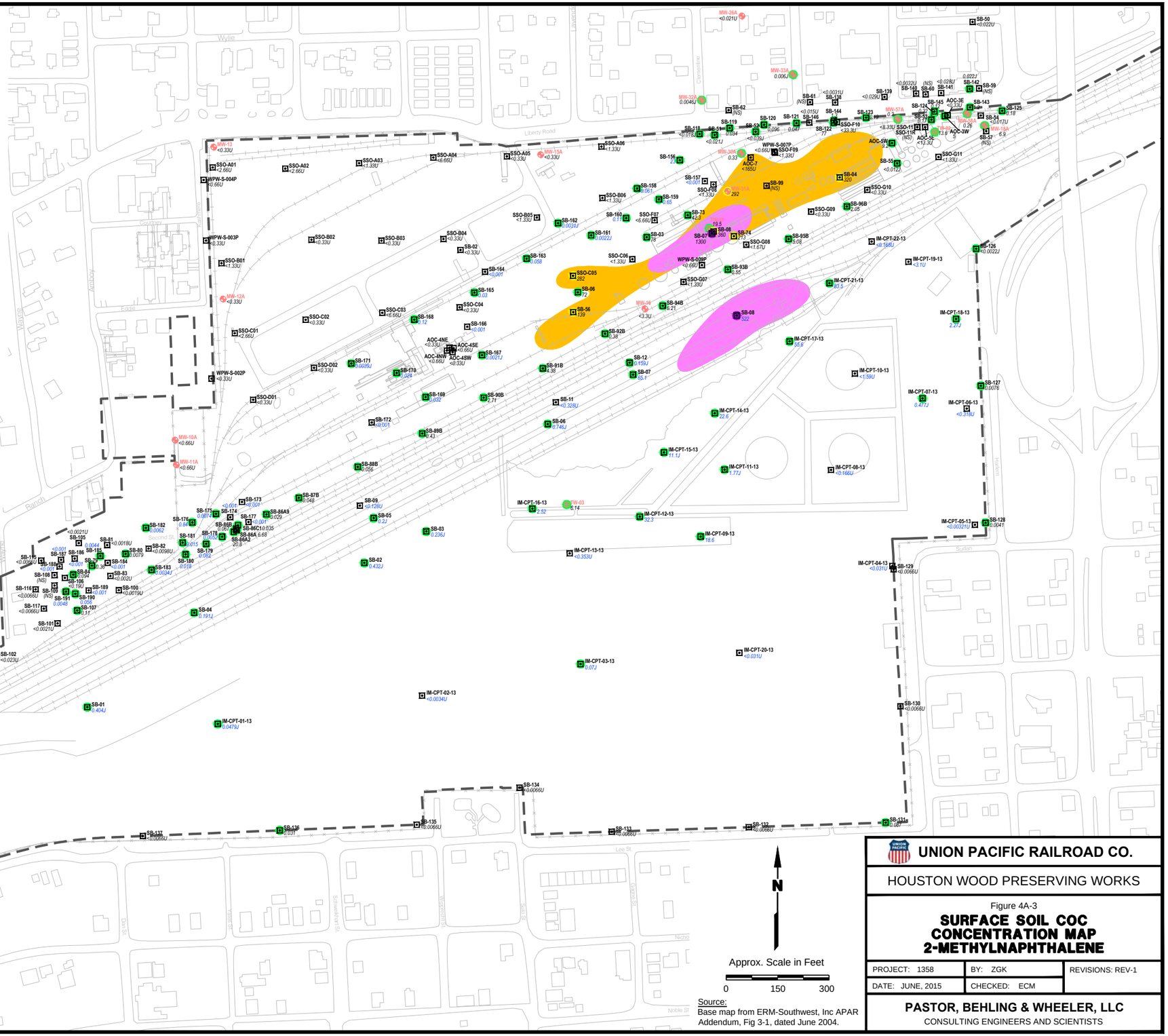
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- *0.33* — 2-Methylnaphthalene Concentration in mg/Kg
- *(NS)* — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 126 mg/Kg.
4. Critical PCL (cPCL)= 378 mg/Kg (on-site), (cPCL)= 126 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.


Wylie
Liberty Road
Lawndale
Clarewater
Kirkley
Wayne
Courtney
Edsall
Quitman
Arcadia
Lockwall
Baron
Second St
Sudan
Hewitt
Lee St
Noble St
Orange St
Wood St
Main St
Southeast 1st St
Davis St
Wilco St
Nichols St
MW-1A <0.33U
MW-2A <0.021U
MW-3A 0.006J
MW-4A 0.0046J
MW-5A 0.22
MW-6A 0.26
MW-7A 6.9
MW-8A 0.33
MW-9A 292
MW-10A <0.66U
MW-11A <0.66U
MW-12A <0.33U
MW-13A <0.33U
MW-14A <3.3U
MW-15A <0.33U
MW-16A 1300
MW-17A 1.4
MW-18A 0.14
MW-19A 0.0076
MW-20A 0.0041
MW-21A <0.0066U
MW-22A <0.0066U
MW-23A <0.0066U
MW-24A <0.0066U
MW-25A <0.0066U
MW-26A <0.0066U
MW-27A <0.0066U
MW-28A <0.0066U
MW-29A <0.0066U
MW-30A <0.0066U
MW-31A <0.0066U
MW-32A <0.0066U
MW-33A <0.0066U
MW-34A <0.0066U
MW-35A <0.0066U
MW-36A <0.0066U
MW-37A <0.0066U
MW-38A <0.0066U
MW-39A <0.0066U
MW-40A <0.0066U
MW-41A <0.0066U
MW-42A <0.0066U
MW-43A <0.0066U
MW-44A <0.0066U
MW-45A <0.0066U
MW-46A <0.0066U
MW-47A <0.0066U
MW-48A <0.0066U
MW-49A <0.0066U
MW-50A <0.0066U
MW-51A <0.0066U
MW-52A <0.0066U
MW-53A <0.0066U
MW-54A <0.0066U
MW-55A <0.0066U
MW-56A <0.0066U
MW-57A <0.0066U
MW-58A <0.0066U
MW-59A <0.0066U
MW-60A <0.0066U
MW-61A <0.0066U
MW-62A <0.0066U
MW-63A <0.0066U
MW-64A <0.0066U
MW-65A <0.0066U
MW-66A <0.0066U
MW-67A <0.0066U
MW-68A <0.0066U
MW-69A <0.0066U
MW-70A <0.0066U
MW-71A <0.0066U
MW-72A <0.0066U
MW-73A <0.0066U
MW-74A <0.0066U
MW-75A <0.0066U
MW-76A <0.0066U
MW-77A <0.0066U
MW-78A <0.0066U
MW-79A <0.0066U
MW-80A <0.0066U
MW-81A <0.0066U
MW-82A <0.0066U
MW-83A <0.0066U
MW-84A <0.0066U
MW-85A <0.0066U
MW-86A <0.0066U
MW-87A <0.0066U
MW-88A <0.0066U
MW-89A <0.0066U
MW-90A <0.0066U
MW-91A <0.0066U
MW-92A <0.0066U
MW-93A <0.0066U
MW-94A <0.0066U
MW-95A <0.0066U
MW-96A <0.0066U
MW-97A <0.0066U
MW-98A <0.0066U
MW-99A <0.0066U
MW-100A <0.0066U
MW-101A <0.0066U
MW-102A <0.0066U
MW-103A <0.0066U
MW-104A <0.0066U
MW-105A <0.0066U
MW-106A <0.0066U
MW-107A <0.0066U
MW-108A <0.0066U
MW-109A <0.0066U
MW-110A <0.0066U
MW-111A <0.0066U
MW-112A <0.0066U
MW-113A <0.0066U
MW-114A <0.0066U
MW-115A <0.0066U
MW-116A <0.0066U
MW-117A <0.0066U
MW-118A <0.0066U
MW-119A <0.0066U
MW-120A <0.0066U
MW-121A <0.0066U
MW-122A <0.0066U
MW-123A <0.0066U
MW-124A <0.0066U
MW-125A <0.0066U
MW-126A <0.0066U
MW-127A <0.0066U
MW-128A <0.0066U
MW-129A <0.0066U
MW-130A <0.0066U
MW-131A <0.0066U
MW-132A <0.0066U
MW-133A <0.0066U
MW-134A <0.0066U
MW-135A <0.0066U
MW-136A <0.0066U
MW-137A <0.0066U
MW-138A <0.0066U
MW-139A <0.0066U
MW-140A <0.0066U
MW-141A <0.0066U
MW-142A <0.0066U
MW-143A <0.0066U
MW-144A <0.0066U
MW-145A <0.0066U
MW-146A <0.0066U
MW-147A <0.0066U
MW-148A <0.0066U
MW-149A <0.0066U
MW-150A <0.0066U
MW-151A <0.0066U
MW-152A <0.0066U
MW-153A <0.0066U
MW-154A <0.0066U
MW-155A <0.0066U
MW-156A <0.0066U
MW-157A <0.0066U
MW-158A <0.0066U
MW-159A <0.0066U
MW-160A <0.0066U
MW-161A <0.0066U
MW-162A <0.0066U
MW-163A <0.0066U
MW-164A <0.0066U
MW-165A <0.0066U
MW-166A <0.0066U
MW-167A <0.0066U
MW-168A <0.0066U
MW-169A <0.0066U
MW-170A <0.0066U
MW-171A <0.0066U
MW-172A <0.0066U
MW-173A <0.0066U
MW-174A <0.0066U
MW-175A <0.0066U
MW-176A <0.0066U
MW-177A <0.0066U
MW-178A <0.0066U
MW-179A <0.0066U
MW-180A <0.0066U
MW-181A <0.0066U
MW-182A <0.0066U
MW-183A <0.0066U
MW-184A <0.0066U
MW-185A <0.0066U
MW-186A <0.0066U
MW-187A <0.0066U
MW-188A <0.0066U
MW-189A <0.0066U
MW-190A <0.0066U
MW-191A <0.0066U
MW-192A <0.0066U
MW-193A <0.0066U
MW-194A <0.0066U
MW-195A <0.0066U
MW-196A <0.0066U
MW-197A <0.0066U
MW-198A <0.0066U
MW-199A <0.0066U
MW-200A <0.0066U
MW-201A <0.0066U
MW-202A <0.0066U
MW-203A <0.0066U
MW-204A <0.0066U
MW-205A <0.0066U
MW-206A <0.0066U
MW-207A <0.0066U
MW-208A <0.0066U
MW-209A <0.0066U
MW-210A <0.0066U
MW-211A <0.0066U
MW-212A <0.0066U
MW-213A <0.0066U
MW-214A <0.0066U
MW-215A <0.0066U
MW-216A <0.0066U
MW-217A <0.0066U
MW-218A <0.0066U
MW-219A <0.0066U
MW-220A <0.0066U
MW-221A <0.0066U
MW-222A <0.0066U
MW-223A <0.0066U
MW-224A <0.0066U
MW-225A <0.0066U
MW-226A <0.0066U
MW-227A <0.0066U
MW-228A <0.0066U
MW-229A <0.0066U
MW-230A <0.0066U
MW-231A <0.0066U
MW-232A <0.0066U
MW-233A <0.0066U
MW-234A <0.0066U
MW-235A <0.0066U
MW-236A <0.0066U
MW-237A <0.0066U
MW-238A <0.0066U
MW-239A <0.0066U
MW-240A <0.0066U
MW-241A <0.0066U
MW-242A <0.0066U
MW-243A <0.0066U
MW-244A <0.0066U
MW-245A <0.0066U
MW-246A <0.0066U
MW-247A <0.0066U
MW-248A <0.0066U
MW-249A <0.0066U
MW-250A <0.0066U
MW-251A <0.0066U
MW-252A <0.0066U
MW-253A <0.0066U
MW-254A <0.0066U
MW-255A <0.0066U
MW-256A <0.0066U
MW-257A <0.0066U
MW-258A <0.0066U
MW-259A <0.0066U
MW-260A <0.0066U
MW-261A <0.0066U
MW-262A <0.0066U
MW-263A <0.0066U
MW-264A <0.0066U
MW-265A <0.0066U
MW-266A <0.0066U
MW-267A <0.0066U
MW-268A <0.0066U
MW-269A <0.0066U
MW-270A <0.0066U
MW-271A <0.0066U
MW-272A <0.0066U
MW-273A <0.0066U
MW-274A <0.0066U
MW-275A <0.0066U
MW-276A <0.0066U
MW-277A <0.0066U
MW-278A <0.0066U
MW-279A <0.0066U
MW-280A <0.0066U
MW-281A <0.0066U
MW-282A <0.0066U
MW-283A <0.0066U
MW-284A <0.0066U
MW-285A <0.0066U
MW-286A <0.0066U
MW-287A <0.0066U
MW-288A <0.0066U
MW-289A <0.0066U
MW-290A <0.0066U
MW-291A <0.0066U
MW-292A <0.0066U
MW-293A <0.0066U
MW-294A <0.0066U
MW-295A <0.0066U
MW-296A <0.0066U
MW-297A <0.0066U
MW-298A <0.0066U
MW-299A <0.0066U
MW-300A <0.0066U
MW-301A <0.0066U
MW-302A <0.0066U
MW-303A <0.0066U
MW-304A <0.0066U
MW-305A <0.0066U
MW-306A <0.0066U
MW-307A <0.0066U
MW-308A <0.0066U
MW-309A <0.0066U
MW-310A <0.0066U
MW-311A <0.0066U
MW-312A <0.0066U
MW-313A <0.0066U
MW-314A <0.0066U
MW-315A <0.0066U
MW-316A <0.0066U
MW-317A <0.0066U
MW-318A <0.0066U
MW-319A <0.0066U
MW-320A <0.0066U
MW-321A <0.0066U
MW-322A <0.0066U
MW-323A <0.0066U
MW-324A <0.0066U
MW-325A <0.0066U
MW-326A <0.0066U
MW-327A <0.0066U
MW-328A <0.0066U
MW-329A <0.0066U
MW-330A <0.0066U
MW-331A <0.0066U
MW-332A <0.0066U
MW-333A <0.0066U
MW-334A <0.0066U
MW-335A <0.0066U
MW-336A <0.0066U
MW-337A <0.0066U
MW-338A <0.0066U
MW-339A <0.0066U
MW-340A <0.0066U
MW-341A <0.0066U
MW-342A <0.0066U
MW-343A <0.0066U
MW-344A <0.0066U
MW-345A <0.0066U
MW-346A <0.0066U
MW-347A <0.0066U
MW-348A <0.0066U
MW-349A <0.0066U
MW-350A <0.0066U
MW-351A <0.0066U
MW-352A <0.0066U
MW-353A <0.0066U
MW-354A <0.0066U
MW-355A <0.0066U
MW-356A <0.0066U
MW-357A <0.0066U
MW-358A <0.0066U
MW-359A <0.0066U
MW-360A <0.0066U
MW-361A <0.0066U
MW-362A <0.0066U
MW-363A <0.0066U
MW-364A <0.0066U
MW-365A <0.0066U
MW-366A <0.0066U
MW-367A <0.0066U
MW-368A <0.0066U
MW-369A <0.0066U
MW-370A <0.0066U
MW-371A <0.0066U
MW-372A <0.0066U
MW-373A <0.0066U
MW-374A <0.0066U
MW-375A <0.0066U
MW-376A <0.0066U
MW-377A <0.0066U
MW-378A <0.0066U
MW-379A <0.0066U
MW-380A <0.0066U
MW-381A <0.0066U
MW-382A <0.0066U
MW-383A <0.0066U
MW-384A <0.0066U
MW-385A <0.0066U
MW-386A <0.0066U
MW-387A <0.0066U
MW-388A <0.0066U
MW-389A <0.0066U
MW-390A <0.0066U
MW-391A <0.0066U
MW-392A <0.0066U
MW-393A <0.0066U
MW-394A <0.0066U
MW-395A <0.0066U
MW-396A <0.0066U
MW-397A <0.0066U
MW-398A <0.0066U
MW-399A <0.0066U
MW-400A <0.0066U
MW-401A <0.0066U
MW-402A <0.0066U
MW-403A <0.0066U
MW-404A <0.0066U
MW-405A <0.0066U
MW-406A <0.0066U
MW-407A <0.0066U
MW-408A <0.0066U
MW-409A <0.0066U
MW-410A <0.0066U
MW-411A <0.0066U
MW-412A <0.0066U
MW-413A <0.0066U
MW-414A <0.0066U
MW-415A <0.0066U
MW-416A <0.0066U
MW-417A <0.0066U
MW-418A <0.0066U
MW-419A <0.0066U
MW-420A <0.0066U
MW-421A <0.0066U
MW-422A <0.0066U
MW-423A <0.0066U
MW-424A <0.0066U
MW-425A <0.0066U
MW-426A <0.0066U
MW-427A <0.0066U
MW-428A <0.0066U
MW-429A <0.0066U
MW-430A <0.0066U
MW-431A <0.0066U
MW-432A <0.0066U
MW-433A <0.0066U
MW-434A <0.0066U
MW-435A <0.0066U
MW-436A <0.0066U
MW-437A <0.0066U
MW-438A <0.0066U
MW-439A <0.0066U
MW-440A <0.0066U
MW-441A <0.0066U
MW-442A <0.0066U
MW-443A <0.0066U
MW-444A <0.0066U
MW-445A <0.0066U
MW-446A <0.0066U
MW-447A <0.0066U
MW-448A <0.0066U
MW-449A <0.0066U
MW-450A <0.0066U
MW-451A <0.0066U
MW-452A <0.0066U
MW-453A <0.0066U
MW-454A <0.0066U
MW-455A <0.0066U
MW-456A <0.0066U
MW-457A <0.0066U
MW-458A <0.0066U
MW-459A <0.0066U
MW-460A <0.0066U
MW-461A <0.0066U
MW-462A <0.0066U
MW-463A <0.0066U
MW-464A <0.0066U
MW-465A <0.0066U
MW-466A <0.0066U
MW-467A <0.0066U
MW-468A <0.0066U
MW-469A <0.0066U
MW-470A <0.0066U
MW-471A <0.0066U
MW-472A <0.0066U
MW-473A <0.0066U
MW-474A <0.0066U
MW-475A <0.0066U
MW-476A <0.0066U
MW-477A <0.0066U
MW-478A <0.0066U
MW-479A <0.0066U
MW-480A <0.0066U
MW-481A <0.0066U
MW-482A <0.0066U
MW-483A <0.0066U
MW-484A <0.0066U
MW-485A <0.0066U
MW-486A <0.0066U
MW-487A <0.0066U
MW-488A <0.0066U
MW-489A <0.0066U
MW-490A <0.0066U
MW-491A <0.0066U
MW-492A <0.0066U
MW-493A <0.0066U
MW-494A <0.0066U
MW-495A <0.0066U
MW-496A <0.0066U
MW-497A <0.0066U
MW-498A <0.0066U
MW-499A <0.0066U
MW-500A <0.0066U
MW-501A <0.0066U
MW-502A <0.0066U
MW-503A <0.0066U
MW-504A <0.0066U
MW-505A <0.0066U
MW-506A <0.0066U
MW-507A <0.0066U
MW-508A <0.0066U
MW-509A <0.0066U
MW-510A <0.0066U
MW-511A <0.0066U
MW-512A <0.0066U
MW-513A <0.0066U
MW-514A <0.0066U
MW-515A <0.0066U
MW-516A <0.0066U
MW-517A <0.0066U
MW-518A <0.0066U
MW-519A <0.0066U
MW-520A <0.0066U
MW-521A <0.0066U
MW-522A <0.0066U
MW-523A <0.0066U
MW-524A <0.0066U
MW-525A <0.0066U
MW-526A <0.0066U
MW-527A <0.0066U
MW-528A <0.0066U
MW-529A <0.0066U
MW-530A <0.0066U
MW-531A <0.0066U
MW-532A <0.0066U
MW-533A <0.0066U
MW-534A <0.0066U
MW-535A <0.0066U
MW-536A <0.0066U
MW-537A <0.0066U
MW-538A <0.0066U
MW-539A <0.0066U
MW-540A <0.0066U
MW-541A <0.0066U
MW-542A <0.0066U
MW-543A <0.0066U
MW-544A <0.0066U
MW-545A <0.0066U
MW-546A <0.0066U
MW-547A <0.0066U
MW-548A <0.0066U
MW-549A <0.0066U
MW-550A <0.0066U
MW-551A <0.0066U
MW-552A <0.0066U
MW-553A <0.0066U
MW-554A <0.0066U
MW-555A <0.0066U
MW-556A <0.0066U
MW-557A <0.0066U
MW-558A <0.0066U
MW-559A <0.0066U
MW-560A <0.0066U
MW-561A <0.0066U
MW-562A <0.0066U
MW-563A <0.0066U
MW-564A <0.0066U
MW-565A <0.0066U
MW-566A <0.0066U
MW-567A <0.0066U
MW-568A <0.0066U
MW-569A <0.0066U
MW-570A <0.0066U
MW-571A <0.0066U
MW-572A <0.0066U
MW-573A <0.0066U
MW-574A <0.0066U
MW-575A <0.0066U
MW-576A <0.0066U
MW-577A <0.0066U
MW-578A <0.0066U
MW-579A <0.0066U
MW-580A <0.0066U
MW-581A <0.0066U
MW-582A <0.0066U
MW-583A <0.0066U
MW-584A <0.0066U
MW-585A <0.0066U
MW-586A <0.0066U
MW-587A <0.0066U
MW-588A <0.0066U
MW-589A <0.0066U
MW-590A <0.0066U
MW-591A <0.0066U
MW-592A <0.0066U
MW-593A <0.0066U
MW-594A <0.0066U
MW-595A <0.0066U
MW-596A <0.0066U
MW-597A <0.0066U
MW-598A <0.0066U
MW-599A <0.0066U
MW-600A <0.0066U
MW-601A <0.0066U
MW-602A <0.0066U
MW-603A <0.0066U
MW-604A <0.0066U
MW-605A <0.0066U
MW-606A <0.0066U
MW-607A <0.0066U
MW-608A <0.0066U
MW-609A <0.0066U
MW-610A <0.0066U
MW-611A <0.0066U
MW-612A <0.0066U
MW-613A <0.0066U
MW-614A <0.0066U
MW-615A <0.0066U
MW-616A <0.0066U
MW-617A <0.0066U
MW-618A <0.0066U
MW-619A <0.0066U
MW-620A <0.0066U
MW-621A <0.0066U
MW-622A <0.0066U
MW-623A <0.0066U
MW-624A <0.0066U
MW-625A <0.0066U
MW-626A <0.0066U
MW-627A <0.0066U
MW-628A <0.0066U
MW-629A <0.0066U
MW-630A <0.0066U
MW-631A <0.0066U
MW-632A <0.0066U
MW-633A <0.0066U
MW-634A <0.0066U
MW-635A <0.0066U
MW-636A <0.0066U
MW-637A <0.0066U
MW-638A <0.0066U
MW-639A <0.0066U
MW-640A <0.0066U
MW-641A <0.0066U
MW-642A <0.0066U
MW-643A <0.0066U
MW-644A <0.0066U
MW-645A <0.0066U
MW-646A <0.0066U
MW-647A <0.0066U
MW-648A <0.0066U
MW-649A <0.0066U
MW-650A <0.0066U
MW-651A <0.0066U
MW-652A <0.0066U
MW-653A <0.0066U
MW-654A <0.0066U
MW-655A <0.0066U
MW-656A <0.0066U
MW-657A <0.0066U
MW-658A <0.0066U
MW-659A <0.0066U
MW-660A <0.0066U
MW-661A <0.0066U
MW-662A <0.0066U
MW-663A <0.0066U
MW-664A <0.0066U
MW-665A <0.0066U
MW-666A <0.0066U
MW-667A <0.0066U
MW-668A <0.0066U
MW-669A <0.0066U
MW-670A <0.0066U
MW-671A <0.0066U
MW-672A <0.0066U
MW-673A <0.0066U
MW-674A <0.0066U
MW-675A <0.0066U
MW-676A <0.0066U
MW-677A <0.0066U
MW-678A <0.0066U
MW-679A <0.0066U
MW-680A <0.0066U
MW-681A <0.0066U
MW-682A <0.0066U
MW-683A <0.0066U
MW-684A <0.0066U
MW-685A <0.0066U
MW-686A <0.0066U
MW-687A <0.0066U
MW-688A <0.0066U
MW-689A <0.0066U
MW-690A <0.0066U
MW-691A <0.0066U
MW-692A <0.0066U
MW-693A <0.0066U
MW-694A <0.0066U
MW-695A <0.0066U
MW-696A <0.0066U
MW-697A <0.0066U
MW-698A <0.0066U
MW-699A <0.0066U
MW-700A <0.0066U
MW-701A <0.0066U
MW-702A <0.0066U
MW-703A <0.0066U
MW-704A <0.0066U
MW-705A <0.0066U
MW-706A <0.0066U
MW-707A <0.0066U
MW-708A <0.0066U
MW-709A <0.0066U
MW-710A <0.0066U
MW-711A <0.0066U
MW-712A <0.0066U
MW-713A <0.0066U
MW-714A <0.0066U
MW-715A <0.0066U
MW-716A <0.0066U
MW-717A <0.0066U
MW-718A <0.0066U
MW-719A <0.0066U
MW-720A <0.0066U
MW-721A <0.0066U
MW-722A <0.0066U
MW-723A <0.0066U
MW-724A <0.0066U
MW-725A <0.0066U
MW-726A <0.0066U
MW-727A <0.0066U
MW-728A <0.0066U
MW-729A <0.0066U
MW-730A <0.0066U
MW-731A <0.0066U
MW-732A <0.0066U
MW-733A <0.0066U
MW-734A <0.0066U
MW-735A <0.0066U
MW-736A <0.0066U
MW-737A <0.0066U
MW-738A <0.0066U
MW-739A <0.0066U
MW-740A <0.0066U
MW-741A <0.0066U
MW-742A <0.0066U
MW-743A <0.0066U
MW-744A <0.0066U
MW-745A <0.0066U
MW-746A <0.0066U
MW-747A <0.0066U
MW-748A <0.0066U
MW-749A <0.0066U
MW-750A <0.0066U
MW-751A <0.0066U
MW-752A <0.0066U
MW-753A <0.0066U
MW-754A <0.0066U
MW-755A <0.0066U
MW-756A <0.0066U
MW-757A <0.0066U
MW-758A <0.0066U
MW-759A <0.0066U
MW-760A <0.0066U
MW-761A <0.0066U
MW-762A <0.0066U
MW-763A <0.0066U
MW-764A <0.0066U
MW-765A <0.0066U
MW-766A <0.0066U
MW-767A <0.0066U
MW-768A <0.0066U
MW-769A <0.0066U
MW-770A <0.0066U
MW-771A <0.0066U
MW-772A <0.0066U
MW-773A <0.0066U
MW-774A <0.0066U
MW-775A <0.0066U
MW-776A <0.0066U
MW-777A <0.0066U
MW-778A <0.0066U
MW-779A <0.0066U
MW-780A <0.0066U
MW-781A <0.0066U
MW-782A <0.0066U
MW-783A <0.0066U
MW-784A <0.0066U
MW-785A <0.0066U
MW-786A <0.0066U
MW-787A <0.0066U
MW-788A <0.0066U
MW-789A <0.0066U
MW-790A <0.0066U
MW-791A <0.0066U
MW-792A <0.0066U
MW-793A <0.0066U
MW-794A <0.0066U
MW-795A <0.0066U
MW-796A <0.0066U
MW-797A <0.0066U
MW-798A <0.0066U
MW-799A <0.0066U
MW-800A <0.0066U
MW-801A <0.0066U
MW-802A <0.0066U
MW-803A <0.0066U
MW-804A <0.0066U
MW-805A <0.0066U
MW-806A <0.0066U
MW-807A <0.0066U
MW-808A <0.0066U
MW-809A <0.0066U
MW-810A <0.0066U
MW-811A <0.0066U
MW-812A <0.0066U
MW-813A <0.0066U
MW-814A <0.0066U
MW-815A <0.0066U
MW-816A <0.0066U
MW-817A <0.0066U
MW-818A <0.0066U
MW-819A <0.0066U
MW-820A <0.0066U
MW-821A <0.0066U
MW-822A <0.0066U
MW-823A <0.0066U
MW-824A <0.0066U
MW-825A <0.0066U
MW-826A <0.0066U
MW-827A <0.0066U
MW-828A <0.0066U
MW-829A <0.0066U
MW-830A <0.0066U
MW-831A <0.0066U
MW-832A <0.0066U
MW-833A <0.0066U
MW-834A <0.0066U
MW-835A <0.0066U
MW-836A <0.0066U
MW-837A <0.0066U
MW-838A <0.0066U
MW-839A <0.0066U
MW-840A <0.0066U
MW-841A <0.0066U
MW-842A <0.0066U
MW-843A <0.0066U
MW-844A <0.0066U
MW-845A <0.0066U
MW-846A <0.0066U
MW-847A <0.0066U
MW-848A <0.0066U
MW-849A <0.0066U
MW-850A <0.0066U
MW-851A <0.0066U
MW-852A <0.0066U
MW-853A <0.0066U
MW-854A <0.0066U
MW-855A <0.0066U
MW-856A <0.0066U
MW-857A <0.0066U
MW-858A <0.0066U
MW-859A <0.0066U
MW-860A <0.0066U
MW-861A <0.0066U
MW-862A <0.0066U
MW-863A <0.0066U
MW-864A <0.0066U
MW-865A <0.0066U
MW-866A <0.0066U
MW-867A <0.0066U
MW-868A <0.0066U
MW-869A <0.0066U
MW-870A <0.0066U
MW-871A <0.0066U
MW-872A <0.0066U
MW-873A <0.0066U
MW-874A <0.0066U
MW-875A <0.0066U
MW-876A <0.0066U
MW-877A <0.0066U
MW-878A <0.0066U
MW-879A <0.0066U
MW-880A <0.0066U
MW-881A <0.0066U
MW-882A <0.0066U
MW-883A <0.0066U
MW-884A <0.0066U
MW-885A <0.0066U
MW-886A <0.0066U
MW-887A <0.0066U
MW-888A <0.0066U
MW-889A <0.0066U
MW-890A <0.0066U
MW-891A <0.0066U
MW-892A <0.0066U
MW-893A <0.0066U
MW-894A <0.0066U
MW-895A <0.0066U
MW-896A <0.0066U
MW-897A <0.0066U
MW-898A <0.0066U
MW-899A <0.0066U
MW-900A <0.0066U
MW-901A <0.0066U
MW-902A <0.0066U
MW-903A <0.0066U
MW-904A <0.0066U
MW-905A <0.0066U
MW-906A <0.0066U
MW-907A <0.0066U
MW-908A <0.0066U
MW-909A <0.0066U
MW-910A <0.0066U
MW-911A <0.0066U
MW-912A <0.0066U
MW-913A <0.0066U
MW-914A <0.0066U
MW-915A <0.0066U
MW-916A <0.0066U
MW-917A <0.0066U
MW-918A <0.0066U
MW-919A <0.0066U
MW-920A <0.0066U
MW-921A <0.0066U
MW-922A <0.0066U
MW-923A <0.0066U
MW-924A <0.0066U
MW-925A <0.0066U
MW-926A <0.0066U
MW-927A <0.0066U
MW-928A <0.0066U
MW-929A <0.0066U
MW-930A <0.0066U
MW-931A <0.0066U
MW-932A <0.0066U
MW-933A <0.0066U
MW-934A <0.0066U
MW-935A <0.0066U
MW-936A <0.0066U
MW-937A <0.0066U
MW-938A <0.0066U
MW-939A <0.0066U
MW-940A <0.0066U
MW-941A <0.0066U
MW-942A <0.0066U
MW-943A <0.0066U
MW-944A <0.0066U
MW-945A <0.0066U
MW-946A <0.0066U
MW-947A <0.0066U
MW-948A <0.0066U
MW-949A <0.0066U
MW-950A <0.0066U
MW-951A <0.0066U
MW-952A <0.0066U
MW-953A <0.0066U
MW-954A <0.0066U
MW-955A <0.0066U
MW-956A <0.0066U
MW-957A <0.0066U
MW-958A <0.0066U
MW-959A <0.0066U
MW-960A <0.0066U
MW-961A <0.0066U
MW-962A <0.0066U
MW-963A <0.0066U
MW-964A <0.0066U
MW-965A <0.0066U
MW-966A <0.0066U
MW-967A <0.0066U
MW-968A <0.0066U
MW-969A <0.0066U
MW-970A <0.0066U
MW-971A <0.0066U
MW-972A <0.0066U
MW-973A <0.0066U
MW-974A <0.0066U
MW-975A <0.0066U
MW-976A <0.0066U
MW-977A <0.0066U
MW-978A <0.0066U
MW-979A <0.0066U
MW-980A <0.0066U
MW-981A <0.0066U
MW-982A <0.0066U
MW-983A <0.0066U
MW-984A <0.0066U
MW-985A <0.0066U
MW-986A <0.0066U
MW-987A <0.0066U
MW-988A <0.0066U
MW-989A <0.0066U
MW-990A <0.0066U
MW-991A <0.0066U
MW-992A <0.0066U
MW-993A <0.0066U
MW-994A <0.0066U
MW-995A <0.0066U
MW-996A <0.0066U
MW-997A <0.0066U
MW-998A <0.0066U
MW-999A <0.0066U
MW-1000A <0.0066U
SB-01 0.404J
SB-02 0.432J
SB-03 0.236J
SB-04 0.191J
SB-05 0.2J
SB-06 0.746J
SB-07 65.1
SB-08 322
SB-09 <0.128U
SB-10 (NS)
SB-11 <0.328U
SB-12 <0.159U
SB-13 <0.0066U
SB-14 <0.0066U
SB-15 <0.0066U
SB-16 <0.0066U
SB-17 <0.0066U
SB-18 <0.0066U
SB-19 <0.0066U
SB-20 <0.0066U
SB-21 <0.0066U
SB-22 <0.0066U
SB-23 <0.0066U
SB-24 <0.0066U
SB-25 <0.0066U
SB-26 <0.0066U
SB-27 <0.0066U
SB-28 <0.0066U
SB-29 <0.0066U
SB-30 <0.0066U
SB-31 <0.0066U
SB-32 <0.0066U
SB-33 <0.0066U
SB-34 <0.0066U
SB-35 <0.0066U
SB-36 <0.0066U
SB-37 <0.0066U
SB-38 <0.0066U
SB-39 <0.0066U
SB-40 <0.0066U
SB-41 <0.0066U
SB-42 <0.0066U
SB-43 <0.0066U
SB-44 <0.0066U
SB-45 <0.0066U
SB-46 <0.0066U
SB-47 <0.0066U
SB-48 <0.0066U
SB-49 <0.0066U
SB-50 <0.0066U
SB-51 <0.0066U
SB-52 <0.0066U
SB-53 <0.0066U
SB-54 <0.0066U
SB-55 <0.0066U
SB-56 <0.0066U
SB-57 <0.0066U
SB-58 <0.0066U
SB-59 <0.0066U
SB-60 <0.0066U
SB-61 <0.0066U
SB-62 <0.0066U
SB-63 <0.0066U
SB-64 <0.0066U
SB-65 <0.0066U
SB-66 <0.0066U
SB-67 <0.0066U
SB-68 <0.0066U
SB-69 <0.0066U
SB-70 <0.0066U
SB-71 <0.0066U
SB-72 <0.0066U
SB-73 <0.0066U
SB-74 <0.0066U
SB-75 <0.0066U
SB-76 <0.0066U
SB-77 <0.0066U
SB-78 <0.0066U
SB-79 <0.0066U
SB-80 <0.0066U
SB-81 <0.0066U
SB-82 <0.0066U
SB-83 <0.0066U
SB-84 <0.0066U
SB-85 <0.0066U
SB-86 <0.0066U
SB-87 <0.0066U
SB-88 <0.0066U
SB-89 <0.0066U
SB-90 <0.0066U
SB-91 <0.0066U
SB-92 <0.0066U
SB-93 <0.0066U
SB-94 <0.0066U
SB-95 <0.0066U
SB-96 <0.0066U
SB-97 <0.0066U
SB-98 <0.0066U
SB-99 <0.0066U
SB-100 <0.0066U
SB-101 <0.0066U
SB-102 <0.0066U
SB-103 <0.0066U
SB-104 <0.0066U
SB-105 <0.0066U
SB-106 <0.0066U
SB-107 <0.0066U
SB-108 <0.0066U
SB-109 <0.0066U
SB-110 <0.0066U
SB-111 <0.0066U
SB-112 <0.0066U
SB-113 <0.0066U
SB-114 <0.0066U
SB-115 <0.0066U
SB-116 <0.0066U
SB-117 <0.0066U
SB-118 <0.0066U
SB-119 <0.0066U
SB-120 <0.0066U
SB-121 <0.0066U
SB-122 <0.0066U
SB-123 <0.0066U
SB-124 <0.0066U
SB-125 <0.0066U
SB-126 <0.0066U
SB-127 <0.0066U
SB-128 <0.0066U
SB-129 <0.0066U
SB-130 <0.0066U
SB-131 <0.0066U
SB-132 <0.0066U
SB-133 <0.0066U
SB-134 <0.0066U
SB-135 <0.0066U
SB-136 <0.0066U
SB-137 <0.0066U
SB-138 <0.0066U
SB-139 <0.0066U
SB-140 <0.0066U
SB-141 <0.0066U
SB-142 <0.0066U
SB-143 <0.0066U
SB-144 <0.0066U
SB-145 <0.0066U
SB-146 <0.0066U
SB-147 <0.0066U
SB-148 <0.0066U
SB-149 <0.0066U
SB-150 <0.0066U
SB-151 <0.0066U
SB-152 <0.0066U
SB-153 <0.0066U
SB-154 <0.0066U
SB-155 <0.0066U
SB-156 <0.0066U
SB-157 <0.0066U
SB-158 <0.0066U
SB-159 <0.0066U
SB-160 <0.0066U
SB-161 <0.0066U
SB-162 <0.0066U
SB-163 <0.0066U
SB-164 <0.0066U
SB-165 <0.0066U
SB-166 <0.0066U
SB-167 <0.0066U
SB-168 <0.0066U
SB-169 <0.0066U
SB-170 <0.0066U
SB-171 <0.0066U
SB-172 <0.0066U
SB-173 <0.0066U
SB-174 <0.0066U
SB-175 <0.0066U
SB-176 <0.0066U
SB-177 <0.0066U
SB-178 <0.0066U
SB-179 <0.0066U
SB-180 <0.0066U
SB-181 <0.0066U
SB-182 <0.0066U
SB-183 <0.0066U
SB-184 <0.0066U
SB-185 <0.0066U
SB-186 <0.0066U
SB-187 <0.0066U
SB-188 <0.0066U
SB-189 <0.0066U
SB-190 <0.0066U
SB-191 <0.0066U
SB-192 <0.0066U
SB-193 <0.0066U
SB-194 <0.0066U
SB-195 <0.0066U
SB-196 <0.0066U
SB-197 <0.0066U
SB-198 <0.0066U
SB-199 <0.0066U
SB-200 <0.0066U
SB-201 <0.0066U
SB-202 <0.0066U
SB-203 <0.0066U
SB-204 <0.0066U
SB-205 <0.0066U
SB-206 <0.0066U
SB-207 <0.0066U
SB-208 <0.0066U
SB-209 <0.0066U
SB-210 <0.0066U
SB-211 <0.0066U
SB-212 <0.0066U
SB-213 <0.0066U
SB-214 <0.0066U
SB-215 <0.0066U
SB-216 <0.0066U
SB-217 <0.0066U
SB-218 <0.0066U
SB-219 <0.0066U
SB-220 <0.0066U
SB-221 <0.0066U
SB-222 <0.0066U
SB-223 <0.0066U
SB-224 <0.0066U
SB-225 <0.0066U
SB-226 <0.0066U
SB-227 <0.0066U
SB-228 <0.0066U
SB-229 <0.0066U
SB-230 <0.0066U
SB-231 <0.0066U
SB-232 <0.0066U
SB-233 <0.0066U
SB-234 <0.0066U
SB-235 <0.0066U
SB-236 <0.0066U
SB-237 <0.0066U
SB-238 <0.0066U
SB-239 <0.0066U
SB-240 <0.0066U
SB-241 <0.0066U
SB-242 <0.0066U
SB-243 <0.0066U
SB-244 <0.0066U
SB-245 <0.0066U
SB-246 <0.0066U
SB-247 <0.0066U
SB-248 <0.0066U
SB-249 <0.0066U
SB-250 <0.0066U
SB-251 <0.0066U
SB-252 <0.0066U
SB-253 <0.0066U
SB-254 <0.0066U
SB-255 <0.0066U
SB-256 <0.0066U
SB-257 <0.0066U
SB-258 <0.0066U
SB-259 <0.0066U
SB-260 <0.0066U
SB-261 <0.0066U
SB-262 <0.0066U
SB-263 <0.0066U
SB-264 <0.0066U
SB-265 <0.0066U
SB-266 <0.0066U
SB-267 <0.0066U
SB-268 <0.0066U
SB-269 <0.0066U
SB-270 <0.0066U
SB-271 <0.0066U
SB-272 <0.0066U
SB-273 <0.0066U
SB-274 <0.0066U
SB-275 <0.0066U
SB-276 <0.0066U
SB-277 <0.0066U
SB-278 <0.0066U
SB-279 <0.0066U
SB-280 <0.0066U
SB-281 <0.0066U
SB-282 <0.0066U
SB-283 <0.0066U
SB-284 <0.0066U
SB-285 <0.0066U
SB-286 <0.0066U
SB-287 <0.0066U
SB-288 <0.0066U
SB-289 <0.0066U
SB

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 2.94 — Benzo(a)anthracene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 5.6 mg/Kg.
4. Critical PCL (cPCL)= 23 mg/Kg (on-site), (cPCL)= 5.6 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.

N

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-5

SURFACE SOIL COC CONCENTRATION MAP BENZO(A)ANTHRACENE

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

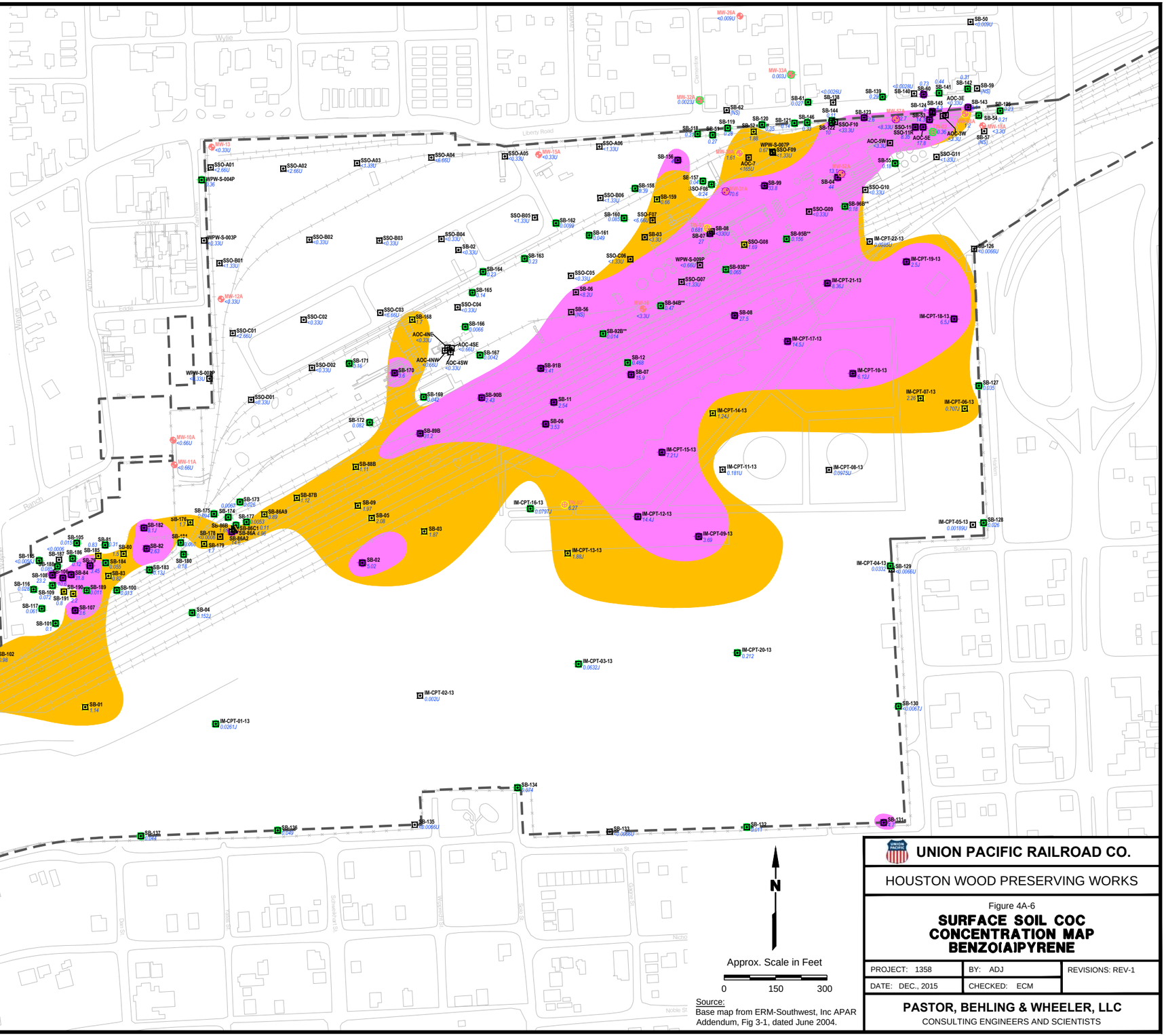
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 1.61 — Benzo(a)pyrene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 0.56 mg/Kg.
4. Critical PCL (cPCL)= 2.36 mg/Kg (on-site), (cPCL)= 0.56 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
6. *- TW-03 soil sample collected from 11-15 ft bgs, used for surface soil sample for on-site assessment; however, considered subsurface soil (>5 ft) sample for cPCL development (C/I Land Use), no cPCL exceedance.
7. ** - Locations included in PCLE Zone since NAPL noted in soil boring surface soils above sample location.



Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-6

SURFACE SOIL COC CONCENTRATION MAP BENZO(A)PYRENE

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

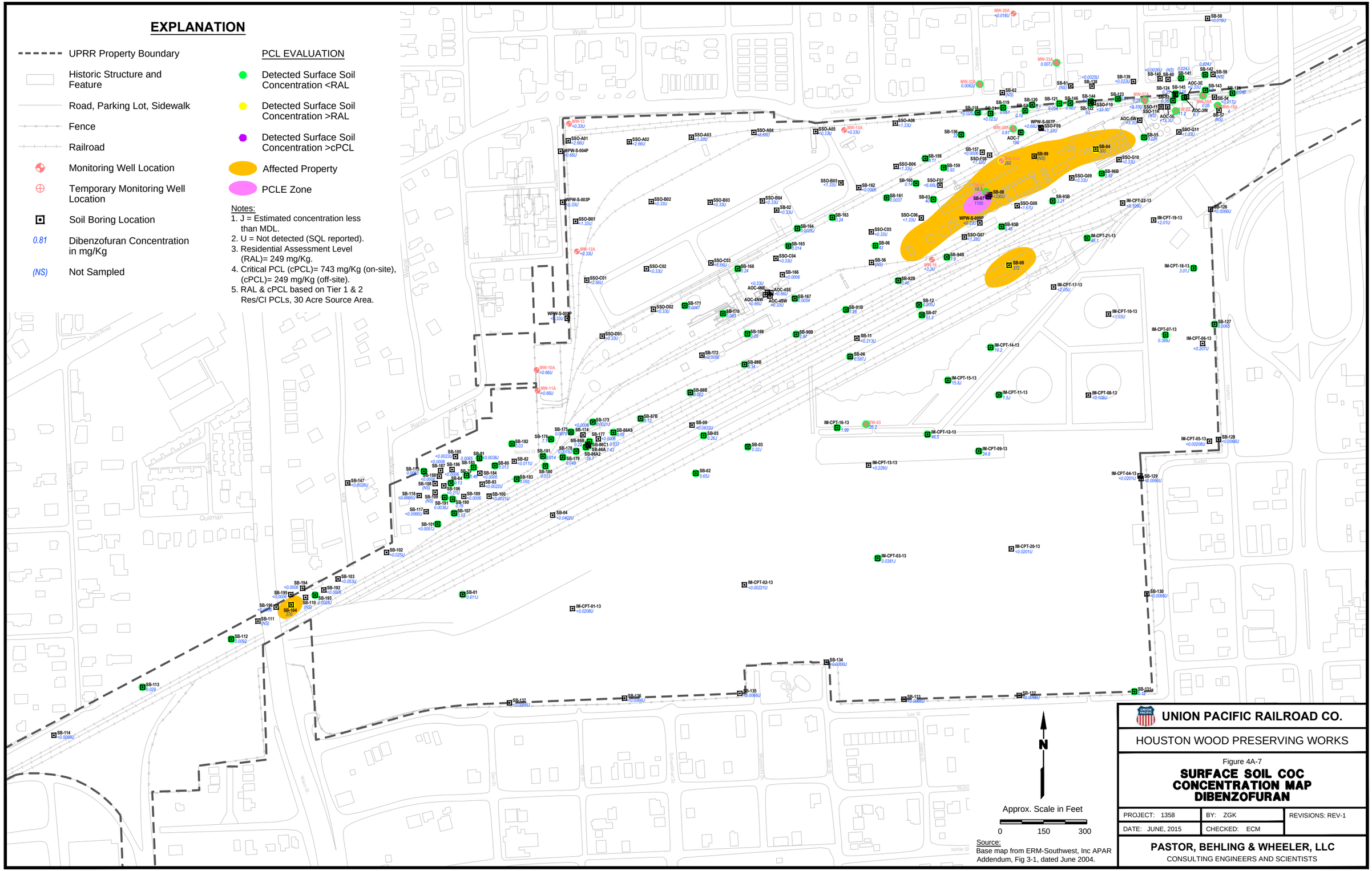
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 0.81 — Dibenzofuran Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 249 mg/Kg.
4. Critical PCL (cPCL)= 743 mg/Kg (on-site), (cPCL)= 249 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.


Wylie
Liberty Road
Lawndale
Clarewater
Courtney
Kirby
Wayne
Edsel
Barron
Quitman
Lellingwell
Arcadia
Second St
Sudan
Hayes
Lee St
Noble St
Wilson St
Orange St
Southwest Fwy
Main St
Smith St
Nichols St
MW-26A <0.018U
MW-33A 0.007J
MW-32A 0.0062J
MW-13 <0.33U
MW-12A <0.33U
MW-10A <0.66U
MW-11A <0.66U
MW-15A <0.33U
MW-36B 0.81
MW-57A 0.28
MW-18A <0.17U
MW-03 26.2
SB-50 <0.0179U
SB-59 (NS)
SB-54 <0.017U
SB-57 (NS)
SB-61 (NS)
SB-62 (NS)
SB-51 0.051
SB-52 0.12
SB-53 0.05
SB-55 0.026
SB-56 (NS)
SB-58 0.11
SB-59 0.93
SB-60 0.0024J
SB-63 0.0067
SB-64 0.0044J
SB-65 0.0024J
SB-66 <0.0026U
SB-67 <0.0026U
SB-68 <0.0026U
SB-69 <0.0026U
SB-70 <0.0026U
SB-71 <0.0026U
SB-72 <0.0026U
SB-73 <0.0026U
SB-74 <0.0026U
SB-75 <0.0026U
SB-76 <0.0026U
SB-77 <0.0026U
SB-78 <0.0026U
SB-79 <0.0026U
SB-80 <0.0026U
SB-81 <0.0026U
SB-82 <0.0026U
SB-83 <0.0026U
SB-84 <0.0026U
SB-85 <0.0026U
SB-86 <0.0026U
SB-87 <0.0026U
SB-88 <0.0026U
SB-89 <0.0026U
SB-90 <0.0026U
SB-91 <0.0026U
SB-92 <0.0026U
SB-93 <0.0026U
SB-94 <0.0026U
SB-95 <0.0026U
SB-96 <0.0026U
SB-97 <0.0026U
SB-98 <0.0026U
SB-99 (NS)
SB-100 <0.0026U
SB-101 <0.0026U
SB-102 <0.0026U
SB-103 <0.0026U
SB-104 <0.0026U
SB-105 <0.0026U
SB-106 <0.0026U
SB-107 <0.0026U
SB-108 <0.0026U
SB-109 <0.0026U
SB-110 <0.0026U
SB-111 <0.0026U
SB-112 <0.0026U
SB-113 <0.0026U
SB-114 <0.0026U
SB-115 <0.0026U
SB-116 <0.0026U
SB-117 <0.0026U
SB-118 <0.0026U
SB-119 <0.0026U
SB-120 <0.0026U
SB-121 <0.0026U
SB-122 <0.0026U
SB-123 <0.0026U
SB-124 <0.0026U
SB-125 <0.0026U
SB-126 <0.0066U
SB-127 <0.0066U
SB-128 <0.0066U
SB-129 <0.0066U
SB-130 <0.0066U
SB-131 <0.0066U
SB-132 <0.0066U
SB-133 <0.0066U
SB-134 <0.0066U
SB-135 <0.0066U
SB-136 <0.0066U
SB-137 <0.0066U
SB-138 <0.0025U
SB-139 <0.0225U
SB-140 <0.0026U
SB-141 0.0241
SB-142 <0.0026U
SB-143 <0.0026U
SB-144 <0.0026U
SB-145 <0.0026U
SB-146 <0.0026U
SB-147 <0.0028U
SB-148 <0.0026U
SB-149 <0.0026U
SB-150 <0.0026U
SB-151 <0.0026U
SB-152 <0.0026U
SB-153 <0.0026U
SB-154 <0.0026U
SB-155 <0.0026U
SB-156 <0.0026U
SB-157 <0.0026U
SB-158 <0.0026U
SB-159 <0.0026U
SB-160 <0.0026U
SB-161 <0.0026U
SB-162 <0.0026U
SB-163 <0.0026U
SB-164 <0.0026U
SB-165 <0.0026U
SB-166 <0.0026U
SB-167 <0.0026U

EXPLANATION

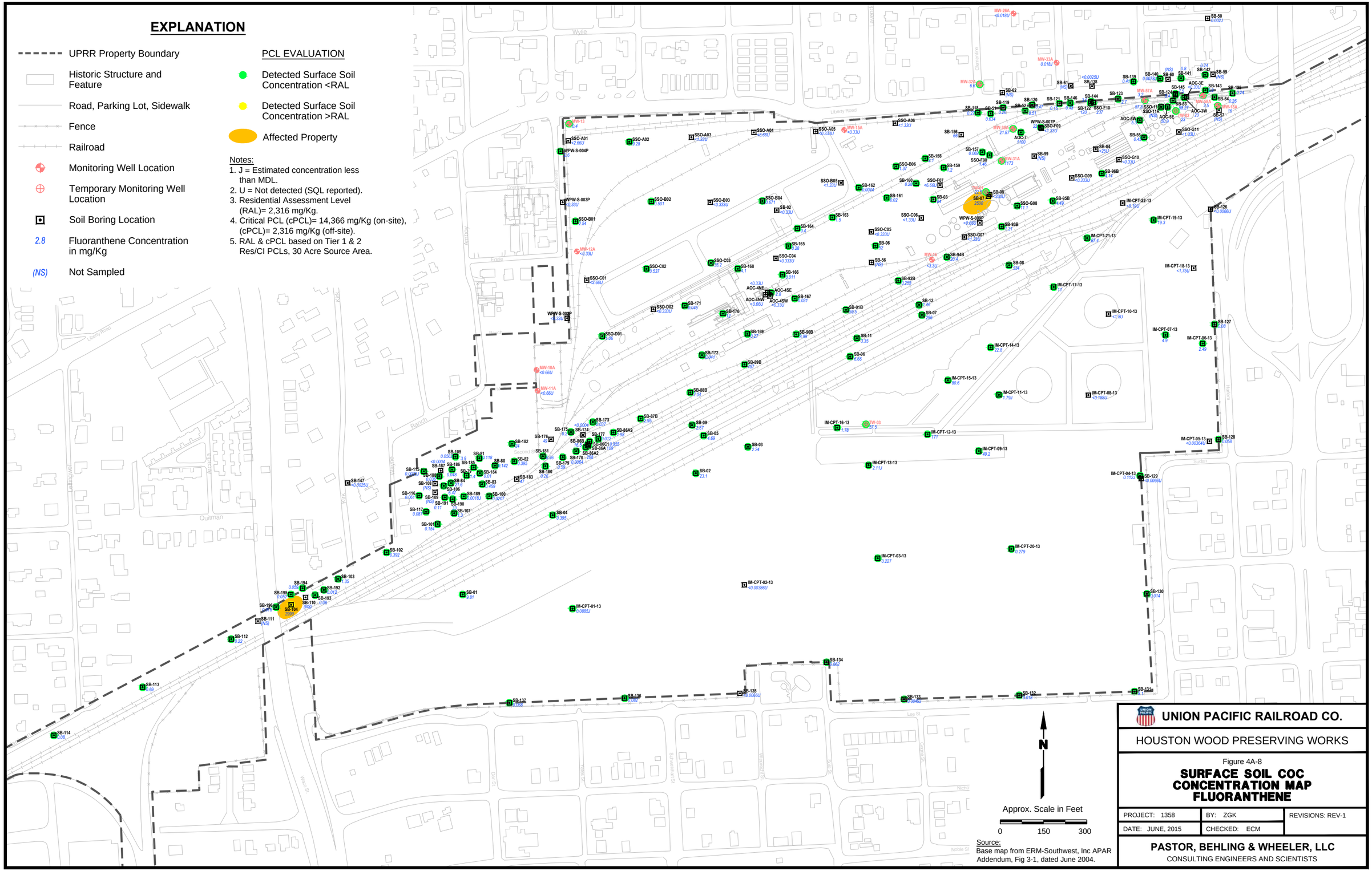
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 2.8 — Fluoranthene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Affected Property

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 2,316 mg/Kg.
4. Critical PCL (cPCL)= 14,366 mg/Kg (on-site), (cPCL)= 2,316 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



N

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-8

SURFACE SOIL COC CONCENTRATION MAP FLUORANTHENE

PROJECT: 1358	BY: ZGK	REVISIONS: REV-1
DATE: JUNE, 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

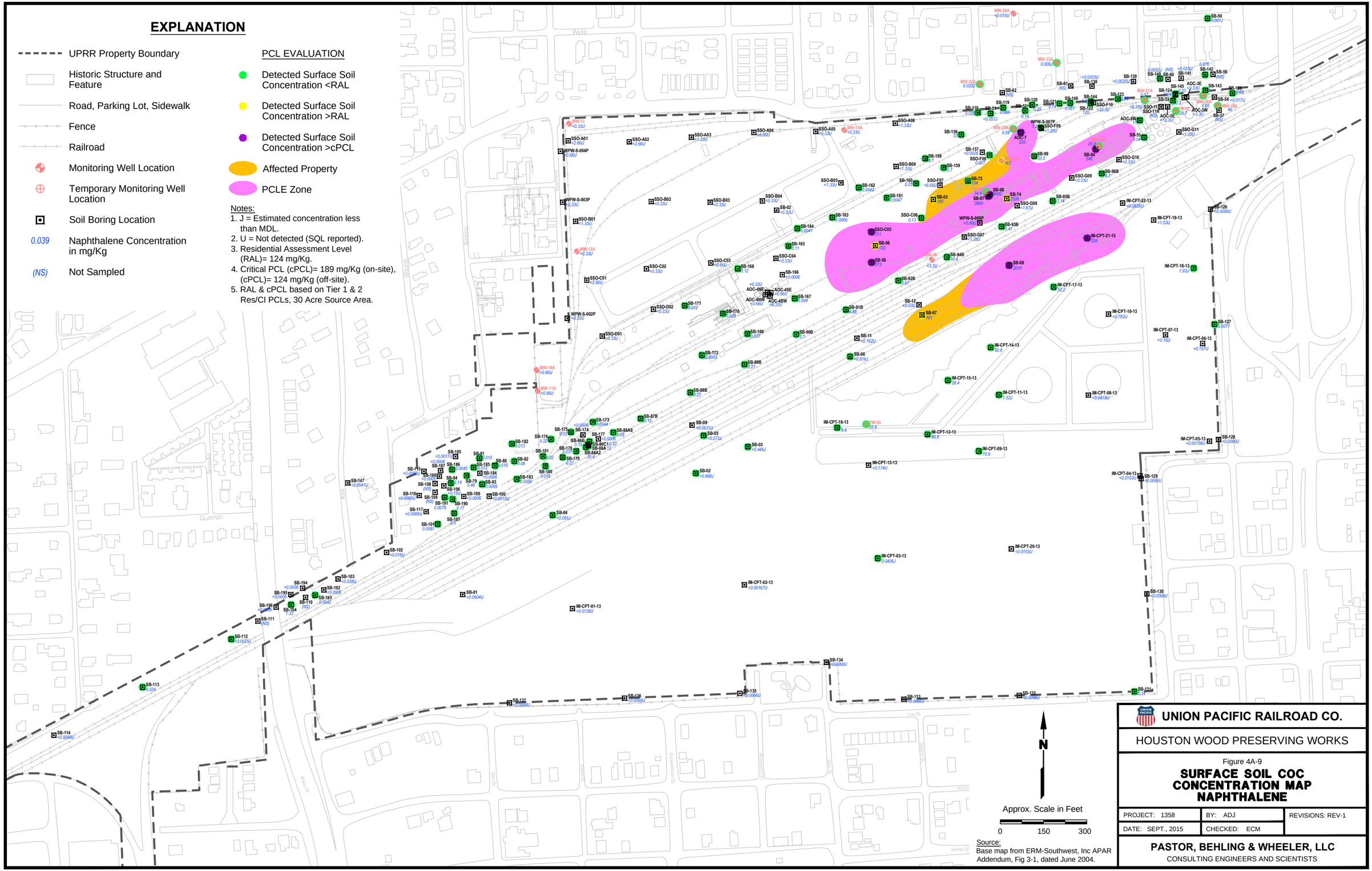
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 0.039 — Naphthalene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 124 mg/Kg.
4. Critical PCL (cPCL)= 189 mg/Kg (on-site), (cPCL)= 124 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



N

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-9

SURFACE SOIL COC CONCENTRATION MAP NAPHTHALENE

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 0.078 — Pentachlorophenol Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 0.12 mg/Kg.
4. Critical PCL (cPCL)= 0.12 mg/Kg (on-site and off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
6. R= Resampled location for PCP (2006) (i.e., SSO-C01R).

N

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-10

SURFACE SOIL COC CONCENTRATION MAP PENTACHLOROPHENOL

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

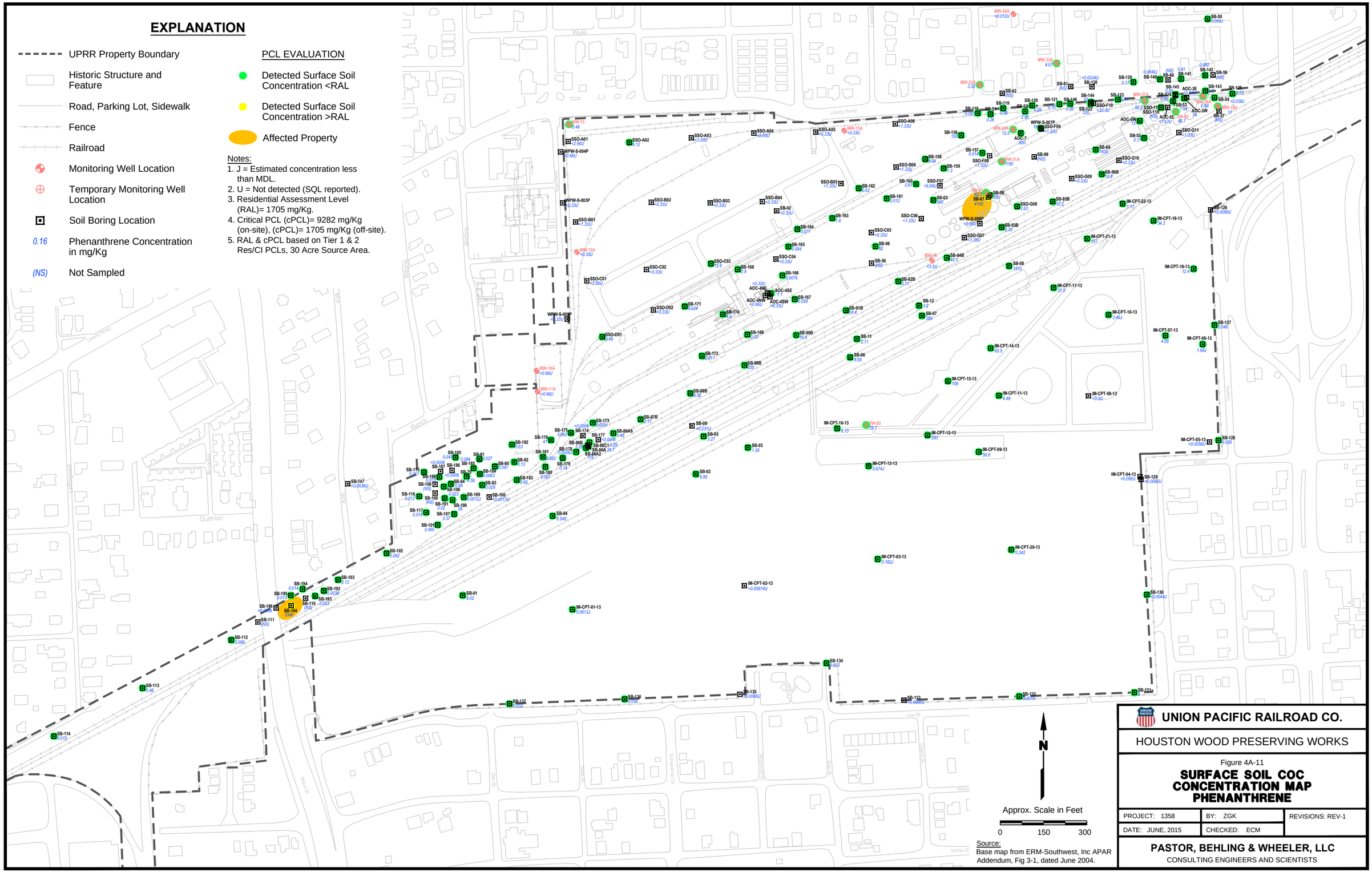
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Temporary Monitoring Well Location
- Soil Boring Location
- 0.16 — Phenanthrene Concentration in mg/Kg
- (NS) — Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Affected Property

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 1705 mg/Kg.
4. Critical PCL (cPCL)= 9282 mg/Kg (on-site), (cPCL)= 1705 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-11

SURFACE SOIL COC CONCENTRATION MAP PHENANTHRENE

PROJECT: 1358	BY: ZGK	REVISIONS: REV-1
DATE: JUNE, 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Soil Boring Location
- 16.9 — Arsenic Concentration in mg/Kg
- (NA) — Not Analyzed

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

Notes:

1. Residential Assessment Level (RAL)= 5.9 mg/Kg.
2. Critical PCL (cPCL)= 5.9 mg/Kg (on-site), (cPCL)= 5.9 mg/Kg (off-site).
3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.

N

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-12

SURFACE SOIL COC CONCENTRATION MAP ARSENIC

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

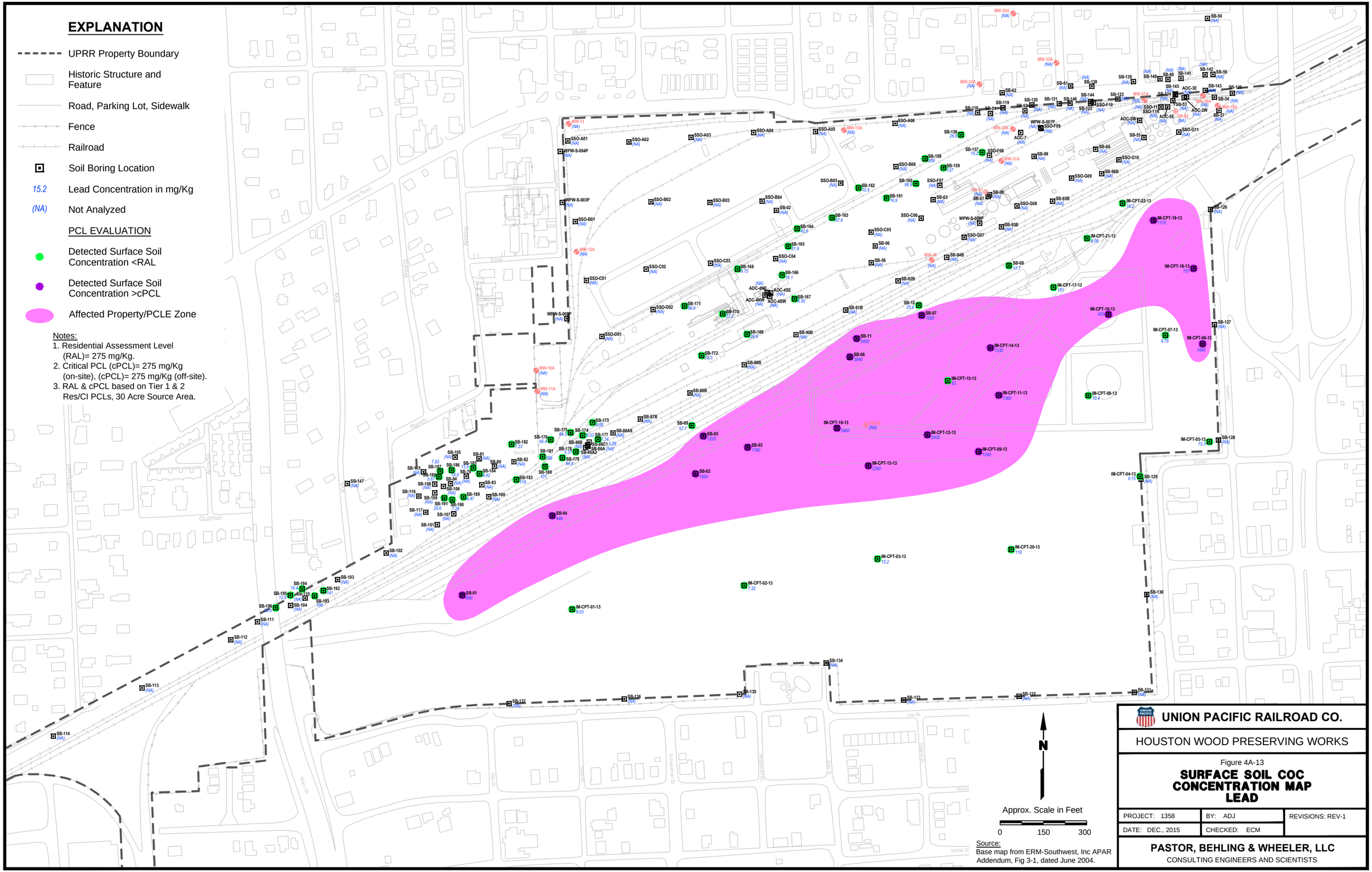
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Soil Boring Location
- *15.2* Lead Concentration in mg/Kg
- *(NA)* Not Analyzed

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

Notes:

1. Residential Assessment Level (RAL)= 275 mg/Kg.
2. Critical PCL (cPCL)= 275 mg/Kg (on-site), (cPCL)= 275 mg/Kg (off-site).
3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 4A-13

SURFACE SOIL COC CONCENTRATION MAP LEAD

PROJECT: 1358	BY: ADJ	REVISIONS: REV-1
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Response Action Design

Use this worksheet to provide detailed descriptions of the response action. Attach design and layout drawings and equipment specifications in Attachment 2A.

Media: **Surface Soil/Subsurface Soils**

List all media to which this information applies. If the response action is different for another media, complete a separate worksheet.

Provide a detailed description of the response action. Describe the removal action, decontamination, treatment system(s), and/or physical or institutional control actions that are proposed for each media and discuss the reasons for choosing the response action(s). Identify and describe any ecological services analysis and compensatory restoration plan that will be utilized (if so, include the complete ESA and compensatory restoration plan in Attachment 2C).

For surface soils, the Remedy Standard B RAOs will include the following approaches based on the area of the Site:

- Former HWPW area: Using the Area of Contamination (AOC) policy, surface soils with cPCL exceedances in the Inactive Wastewater Lagoon (AOC 6), near the Location of the Former Incinerator (AOC 4) surrounding the Tank Car Storage Area (SWMU 7) and Oil/Water Separators (SWMU 11), and areas north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5) and AST Area (SWMU 8) will be consolidated in the area of SWMUs 4, 5, and 8. As allowed under the EPA AOC policy, soils may be consolidated within the AOC (defined at the Site as the "Affected Property") and not be considered to be removed from the land or generated. Soils removed from the proposed areas will be conducted under Remedy Standard A. The removal action has been designed to remove surface soils containing COCs at concentrations exceeding the critical PCLs (primarily $^{Tot}Soil_{Comb}$ PCLs) as shown on Attachment 2A-1a and 2A-1b. The surface soils will be excavated to the vertical extent of the PCLE zone, estimated to be a maximum of approximately 3 feet deep (no greater than 5 feet deep). Soils will be placed within the AOC near SWMU 4, 5 and 8 and covered with an engineered soil cap (Attachment 2A-1a). Based on the current areas delineated, the estimated volume of soil to be consolidated is approximately 9,800 cubic yards. The AOC approach was approved by the TCEQ in a letter dated November 5, 2015 (a copy of the letter is provided in Appendix 3).

  To protect on-site commercial/industrial receptors, a vapor barrier with geotextile fabric, and an engineered soil cap (12-in clayey soil, 6-in topsoil) will be constructed to cover the consolidated soil and surface soil PCLE Zone on the former HWPW area (Attachment 2A-1a). The soil cap will be vegetated (with a pollinator /grass mix to attract pollinators in the area) and sloped to minimize infiltration over the surface/subsurface soil PCLE Zone. The vegetated cap will be maintained under the post-response action care. In the areas where surface soils will be removed, subsurface soils do not appear to be impacted above cPCLs. The subsurface soil PCLE Zone within the HWPW area appears to be only in the areas where the proposed engineered soil cap with vapor barrier will be constructed. The proposed vapor barrier will address the $^{Air}Soil_{Inh\text{-}V}$ PCLE Zone for naphthalene detected in the subsurface soils within and near SWMU 5. Engineering details for the soil cap are provided in Attachment 2A-3 (Engineering Drawings of the HWPW Soil Cap and Roadway Improvements).

  For the SDD (SWMU 2) along the southern boundary of the HWPW (Attachment 2A-1a), UPRR will construct an asphalt roadway to protect on-site commercial/industrial receptors in this area. Currently, a gravel service road used by UPRR is present in this area. Construction of

the asphalt road will consist of grading the existing road material, compacting and stabilizing the existing road material, and applying a hot mix asphalt (2-inches minimum) cover. The asphalt road will be maintained under the post-response action care.

In addition, underground tanks and structures listed as SWMU 11 (Oil/Water Separators) will be removed, properly disposed of, and filled in with clean fill.

- City of Houston ROW: The off-site area immediately north of the AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road (approximately 6 feet wide and 550 feet long) will be addressed through a combination of soil excavation (as part of the AOC to be placed within the capped area) and construction of a concrete sidewalk (+/-800 linear feet) to restrict exposure to the surface soil PCLE zone. A large diameter (8-in) gas utility line is present in the ROW within top five feet. To limit disturbance of the gas utility line, UPRR will excavate the top 9 inches of soil within the surface soil PCLE Zone off-site and construct a reinforced concrete sidewalk and side slope to serve as a physical barrier in the area. Details of the concrete sidewalk construction are provided in Attachment 2A-3. The concrete sidewalk will be routinely inspected as part of the post-response action care. An institutional control will be placed on the City of Houston ROW to maintain the physical control on surface soils (Appendix 5).

- Englewood Intermodal Yard area: The surface and subsurface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with impacted soils for on-site workers. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be routinely inspected to ensure on-site worker protection. Attachment 2A-1a shows the Surface Soil Affected Property and its location beneath the concrete parking lot on the Site. In addition, storm drains within the proposed response action area will be inspected and sediment in the drains if present will be sampled to evaluate if COCs from surface soils have migrated into the storm water drainage system.

- UPRR Main Lines Ballast Area: The area between the former HWPW area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. UPRR proposes to use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. The railroad ballast area will be maintained as part of normal railroad operations. The track is owned and controlled by UPRR. In the event construction activities are necessary within the railroad ballast area, a health and safety plan will be implemented to ensure worker protection from COCs in the surface soils and a soil management plan will be developed if soils are excavated as part of the construction activities.

The Affected Property (including the entire HWPW and Englewood Intermodal Yard Area) will also be deed restricted for commercial-industrial land use and for the use of a physical controls on surface and subsurface soil in accordance with §350.31(g). Institutional controls will also be used to prevent exposure to the COCs in the surface and subsurface soils. Deed restriction of the Site to commercial-industrial use will limit future use and document the use of the physical barrier for surface soils. The PCLE zones for surface and subsurface soils are in an area with restricted property access.

Describe all major treatment system components and equipment of the response action. Illustrate the response action design and provide equipment specifications in Attachment 2A.

For surface and subsurface soils, there is no treatment system proposed. The engineering drawings for the proposed soil cap and roadway improvements are provided in Attachment 2A-3.

List permits or registrations needed to construct or implement the response action, including permits or registrations needed to conduct studies or tests. For VCP sites, list the permits that would be required if the site was not in the VCP (required by the VCP).

Permitting/Registration Authority	Type of permit/registration	Permit or registration number if already issued	Anticipated application date
Harris County Clerk	Deed restriction of on-site property to commercial-industrial use and document the use of a physical control on surface soils for both on-site and off-site (City of Houston ROW)	NA	Within 120 days of RAP approval
TCEQ	TCEQ Hazardous Waste (HW) Permit/Compliance Plan	SWR 31547 HW Permit: 50343 Expires June 10, 2015	HW Permit Renewal/Revision submitted December 10, 2014

Identify and discuss the results of any studies or tests, such as pilot studies, feasibility studies, technical impracticability studies, treatability studies, and/or toxicity studies conducted or proposed to be conducted at the affected property. Discuss the reason for the study or test and how it verifies the effectiveness and appropriateness of the chosen response action or documents that a particular response action is not appropriate for the affected property. Describe how the results of completed studies or tests determined the design or choice of response action. Attach any separate reports and supporting documentation in Appendix 3.

Not applicable for this media.

Media: **Shallow Groundwater – A-TZ, B-TZ, C-TZ GWBU**

List all media to which this information applies. If the response action is different for another media, complete a separate worksheet.

Provide a detailed description of the response action. Describe the removal action, decontamination, treatment system(s), and/or physical or institutional control actions that are proposed for each media and discuss the reasons for choosing the response action(s). Identify and describe any ecological services analysis and compensatory restoration plan that will be utilized (if so, include the complete ESA and compensatory restoration plan in Attachment 2C).

The response action design for the groundwater PCLE Zones will be to implement the modified Remedy Standard B groundwater response action through use of two approaches:

1. PMZs (On-Site (Main and West), Off-Site, and Off-Site City of Houston ROW) for the groundwater PCLE Zones in the A-TZ, B-CZ, B-TZ, and C-TZ (discussed in Worksheet 2.1);
2. Where creosote DNAPL has been observed in soil boring logs and/or monitoring wells, a TI Zone is proposed for those GWBUs A-TZ, B-CZ, B-TZ, and C-TZ (discussed in Worksheet 2.3)

For the PMZ, MNA will be used for the physical control mechanism, which has shown to be a control for migration of the COC groundwater plumes. An evaluation of historical groundwater monitoring data and data trends for the Site indicates that natural attenuation of COCs in groundwater is occurring (Attachments 1A (evaluation of recent groundwater data) and 1B (concentration versus time graphs)). Site-specific COCs will be monitored to ensure the levels of these constituents remain stable and below cPCLs at the point of exposure (POE) wells as well as below the attenuation action levels (AAL) at the attenuation monitoring points (AMP) (Attachment 2A-2). Groundwater monitoring will be used to confirm the continued natural attenuation of COCs to concentrations below cPCLs throughout the PCLE zone; however, this will not likely be achieved in a reasonable timeframe given the presence of creosote DNAPL. Groundwater monitoring will be performed on a semi-annual basis. For the purposes of this RAP submittal, there will be four overall PMZ areas:

1. On-Site PMZ (Main) – The on-site PMZ (Main) will include the cumulative groundwater PCLE Zone within the UPRR-owned property from the center to the east portion of the Site.
2. On-Site PMZ (West) – The on-site PMZ (West) will include the B-CZ/B-TZ PCLE Zone on the west side of the Site within the UPRR-owned property.
3. Off-Site PMZ – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site, but not including land designated as City of Houston ROW. The proposed off-site PMZ will require institutional controls for up to 88 individual properties.
4. Off-Site PMZ City of Houston ROW – The off-site PMZ includes the cumulative groundwater PCLE Zone that is a continuation of the On-Site PMZ (Main) and extends off-site to the north of the Site within the land designated as City of Houston ROW.

The On-Site PMZs (Main and West, including the former HWPW, Englewood Intermodal Yard) will be deed restricted to commercial-industrial land use and to restrict future use of groundwater on-site, as well as restrictions on soil excavation activities within the surface soil PCLE Zone on the UPRR-owned property. The Off-Site PMZ City of Houston ROW will be deed restricted to restrict future use of groundwater on-site, as well as restrictions on soil excavation activities within the surface soil PCLE Zone along a portion of the northern boundary of the Site. For the Off-Site PMZ, UPRR has acquired the necessary landowner consent on 52 of the 88 properties to establish the PMZ on properties not owned by UPRR.

To address the NAPL present in the GWBUs, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be addressed through control via TI. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells, the TI demonstration details the difficulty of achieving groundwater PCLs within a reasonable timeframe in these areas because of complex hydrogeology and physical nature of creosote (discussed in Worksheet 2.3). The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZ can be met. UPRR is currently conducting monthly DNAPL Recovery Activities to evaluate the recoverability of the DNAPL at the Site. The DNAPL recovery consists of monthly pumping events from wells with sufficient volumes of DNAPL that can be recovered. DNAPL recovery will continue on a monthly basis, but the recovery frequency and wells included in the DNAPL Recovery Activities will be evaluated on an annual basis for DNAPL recoverability and effectiveness.

Institutional controls as detailed in §350.31(g) through deed recordation (UPRR-owned property) and restrictive covenants (off-site properties) within the PMZ and TI Zone and restricting the use of groundwater will be used at the Site to prevent future exposure risk until groundwater concentrations achieve critical PCLs. Landowners for some properties within the Off-Site PMZ were not locatable. In accordance with 30 TAC §350.111(c)(3), documentation of the extensive and diligent inquiry to locate those landowners are provided in Appendix 5. Following approval from the TCEQ Executive Director, deed notices on those properties will be placed detailing the Off-Site PMZ.

Describe all major treatment system components and equipment of the response action. Illustrate the response action design and provide equipment specifications in Attachment 2A.

There is no major treatment system proposed to address the groundwater PCLE. Creosote DNAPL will be recovered from selected wells (designated as Corrective Action System Well) using manual pumping (or equivalent) methods, stored on-site at the Container Storage Area (NOR 4), and disposed of in accordance with state and federal regulations within the required timeframes.

List permits or registrations needed to construct or implement the response action, including permits or registrations needed to conduct studies or tests. For VCP sites, list the permits that would be required if the site was not in the VCP (required by the VCP).

Permitting/Registration Authority	Type of permit/registration	Permit or registration number if already issued	Anticipated application date
Harris County Clerk	Deed restriction of property to commercial-industrial use and groundwater use restriction (On-Site PMZs, Off-Site PMZ, and Off-Site PMZ City of Houston ROW)	NA	Within 120 days of RAP approval
TCEQ	TCEQ Hazardous Waste (HW) Permit/Compliance Plan	SWR 31547 HW Permit: 50343 Expires June 10, 2015	HW Permit Renewal/Revision submitted December 10, 2014

Identify and discuss the results of any studies or tests, such as pilot studies, feasibility studies, technical impracticability studies, treatability studies, and/or toxicity studies conducted or proposed to be conducted at the affected property. Discuss the reason for the study or test and how it verifies the effectiveness and appropriateness of the chosen response action or documents that a particular response action is not appropriate for the affected property. Describe how the results of completed studies or tests determined the design or choice of response action. Attach any separate reports and supporting documentation in Appendix 3.

The following two studies have been conducted at the Site to evaluate the groundwater response action methods:

1. DNAPL Recovery Pilot Study; and
2. Front-end TI Demonstration Study (updated).
3. Post-Closure Care/No Further Action (NFA) Assessment for RCRA Unit 1/SWMU No. 1

PBW initiated a 24-month pilot study in February 2013 through January 2015 to evaluate DNAPL recovery at the Site by conducting tests on selected wells where DNAPL had been observed. Details of the scope of work for the pilot test were submitted to the TCEQ in a letter dated February 5, 2013 (PBW, 2013). A copy of the scope of work is provided in Appendix 3. The pilot test procedures consists of measuring the depth to groundwater surface, the depth to the groundwater/DNAPL interface, and the total depth of the well relative to the top of well casing prior to DNAPL recovery. Using a peristaltic or diaphragm pump, DNAPL is pumped from the bottom of the well until groundwater is returned in the pump discharge. The volume of recovered DNAPL is estimated from each well, and the well is gauged to measure the total depth of the well and depth to residual DNAPL following pumping. Recovered DNAPL is temporarily stored at the Containment Storage Area. PBW submitted to the TCEQ in a letter dated April 9, 2105 the results of the 24-month pilot test. A copy of the letter is also provided in Appendix 3. The conclusions from the pilot test included that once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested, and current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time. More frequent DNAPL recovery would not likely be effective at the Site. The report indicated that monthly DNAPL recovery activities following the procedures listed in the pilot test work plan would continue at the Site. DNAPL recoverability, including recovery frequency and wells included in the DNAPL Recovery Activities will be evaluated on an annual basis as part of the post-response action care reporting.

Based on the TCEQ Technical Support Section Interoffice Memorandum (IOM) dated October 14, 2015 by Mr. Paul Lewis in the TI RAP Worksheet 2.3, PBW updated the TI Demonstration (Worksheet 2.3, Attachment 2G) highlighting the factors that inhibit groundwater restoration to cPCLs at the Site within a reasonable timeframe. These include hydrogeological factors and contaminant-related factors that limit the effectiveness of any remediation approach from achieving cPCLs where DNAPL or evidence of DNAPL has been observed. The lateral extents of the TI Zone were also revised to address comments stated in the TCEQ IOM and from a follow-up meeting with the TCEQ on November 4, 2015. The updated TI Demonstration is provided in Attachment 2G.

In the original RAP (Appendix 3C) submittal dated November 21, 2014, PBW prepared a report detailing the supporting documentation for requesting a No Further Action (NFA) and ceasing post-closure care for the Closed Surface Impoundment (Solid Waste Management Unit (SWMU) 1) at the Site. The groundwater monitoring activities over the past three years have shown compliance with groundwater protective standards, and have achieved the groundwater Remedy Standard A requirements under TRRP.

As stated in the TCEQ Technical NOD dated August 5, 2015 for the RAP, the TCEQ stated that the TCEQ Remediation Division, Corrective Action Program concurred with UPRR's request for the NFA (NOD T25). During a meeting between UPRR and the TCEQ to discuss the Technical NOD, it was agreed that additional research would be conducted by UPRR to assess if the historical documentation on the SWMU 1 closure activities in 1984 could support that the soils at the unit had been clean closed. PBW submitted additional information to the TCEQ on September 18, 2015 titled "Additional Information for Clean Closure Equivalence Demonstration" regarding the historical closure activities, agency correspondence, and sampling at SWMU 1.

The TCEQ issued a review comment letter dated November 5, 2015 on the September 18, 2015 submittal stating that "*the I&HW Permits Section is unable to accept the UPRR Company request to discontinue Post-Closure Care of the SWMU No. 1. Our review of the demonstration indicates that the data presented does not exclude the closed surface impoundment from either continuing to be monitored under compliance monitoring or detection monitoring*."

ATTACHMENT 2A

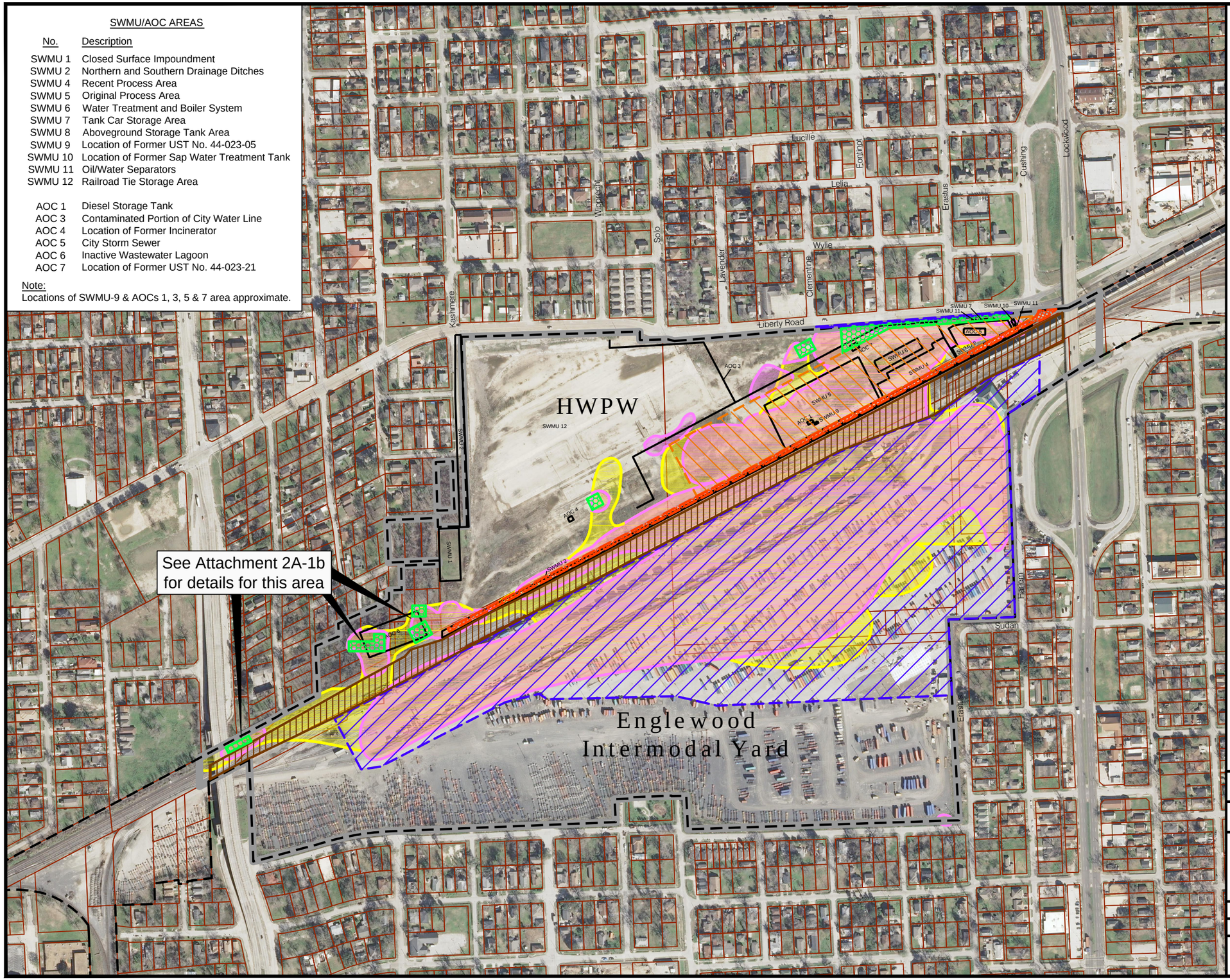
RESPONSE ACTION DIAGRAMS AND COMPONENT/EQUIPMENT DESCRIPTIONS

ATTACHMENT 2A-1a RESPONSE ACTION DESIGN – SOILS
ATTACHMENT 2A-1B RESPONSE ACTION DESIGN – SOILS (AOC6)
ATTACHMENT 2A-2 RESPONSE ACTION DESIGN – GROUNDWATER
ATTACHMENT 2A-3 HOUSTON WOOD PRESERVING WORKS SOIL CAP AND ROADWAY IMPROVEMENTS ENGINEERING DRAWINGS

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 & AOCs 1, 3, 5 & 7 area approximate.



EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)

Area of Contamination:

- Soil Affected Property
- Soil PCLE Zone
- Railroad Ballast Cap Area
- Concrete Cap Area
- Extent of Soil Cap
- Asphalt Road/Cap Area
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area

Note:
Vertical datum based on City of Houston Vertical Datum (HVD).

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2A-1a

RESPONSE ACTION DESIGN SOILS

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Soil Boring Location
- 1.61 Benzo(a)pyrene Concentration in mg/Kg
- Area of Contamination (AOC) (Soil Affected Property)

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
- Railroad Ballast Cap Area
- Concrete Cap Area
- Proposed Asphalt Cap Area

Notes:
1. Benzo(a)pyrene Residential Assessment Level (RAL)= 0.56 mg/Kg.
2. Benzo(a)pyrene critical PCL (cPCL)= 2.36 mg/Kg (on-site), (cPCL)= 0.56 mg/Kg (off-site).
3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
4. * Excavation not necessary based on representative concentration (i.e., 95% UCL) for the 0.5-acre exposure area.

0.5 ACRE EXPOSURE AREA (95% ADJ GAMMA UCL = 2.32)

AOC 6

SB-197 0.014; SB-198 0.008; SB-199 0.21; SB-200 0.075; SB-201 0.0043J; SB-203 0.52; SB-202 0.016; SB-204 0.057; SB-182 8.1J; SB-205 0.99; SB-207 0.19; SB-208 0.36; SB-206 0.14; SB-211 0.56; SB-105 0.015; SB-81 0.31; SB-82 2.63; SB-185 0.83; SB-80 1.5; SB-210 6.3; SB-115 <0.0056J; SB-187 <0.0006; SB-186 0.12; SB-79 3.45; SB-188 0.085; SB-184 0.055; SB-209 0.1; SB-183 0.130; SB-108 23.2; SB-106 10.6; SB-84 31.8; SB-83 0.82; SB-116 0.028; SB-109 0.072; SB-191 0.8; SB-190 2.2; SB-189 0.011; SB-100 0.013; SB-117 0.061; *SB-107 3.6; SB-101 0.1; SB-04 0.152J; SB-102 0.98; SB-103 1.77; SB-194 0.073; SB-192 0.0093; SB-195 0.063; SB-110 5.8; SB-193 0.063; SB-104 13.1; SB-196 0.028; SB-111 1.65; SB-112 0.1; SB-01 1.14; IM-CPT-01-13 0.0261J; SB-87B 1.12; SB-173 0.026; SB-175 0.094; SB-174 0.0067; SB-86A9 0.09; SB-177 0.0058; SB-176 1.7; SB-86B 1.61; SB-86C1 0.11; SB-86A 4.96; SB-86A2 14.6; SB-178 <0.0006; SB-181 0.066; SB-179 1.7; SB-180 0.18

First St.; Ranch; Wayne; MU 1

N

Approx. Scale in Feet

0 50 100

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2A-1b

RESPONSE ACTION DESIGN SOILS

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well.

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

PMW-83B PMW-83C PMW-82B** PMW-84B PMW-85C PMW-86C**

MW-67B MW-65D MW-28C MW-28A MW-63B MW-68C MW-26A MW-33BR MW-68B MW-36B MW-36D MW-44A (DNAPL) MW-45C MW-46C (DNAPL) MW-54C MW-66D MW-27A MW-27C MW-36A MW-25C MW-25A MW-44C (DNAPL) MW-34CR MW-35B** MW-35A MW-32AR (DNAPL) MW-33A MW-70B (DNAPL) MW-71B MW-32B MW-57B* MW-57A (DNAPL) MW-58A MW-18AR MW-60A MW-15C MW-13 MW-14 MW-15A* MW-15B MW-17 MW-17C MW-30A* MW-23C (DNAPL) MW-72B* MW-18C* MW-18A* MW-47C MW-52A* TW-56A* MW-20A MW-31A* MW-19C** MW-55B* MW-55A* MW-73B* MW-74B MW-16* MW-79A MW-48C MW-61A **MW-49B MW-49A MW-69A MW-59A MW-59B MW-59D MW-75B (DNAPL) MW-78A (DNAPL) MW-80B MW-38A MW-39B MW-12C MW-40B MW-12A MW-38B MW-12B (DNAPL) MW-42B TW-41B MW-41B (DNAPL) MW-62B P-11 MW-03 MW-21A TW-21B TW-21C P-12 MW-22A** MW-10B MW-09 MW-22B** MW-11B MW-11A P-10 MW-04 MW-21B MW-05 MW-21C MW-64A MW-77A MW-76C** MW-50A MW-81B MW-51A MW-51C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2A-2

RESPONSE ACTION DESIGN GROUNDWATER

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

ENGINEERING DRAWINGS FOR

HOUSTON WOOD PRESERVING WORKS SOIL CAP AND ROADWAY IMPROVEMENTS

FOR

UNION PACIFIC RAILROAD COMPANY

BY

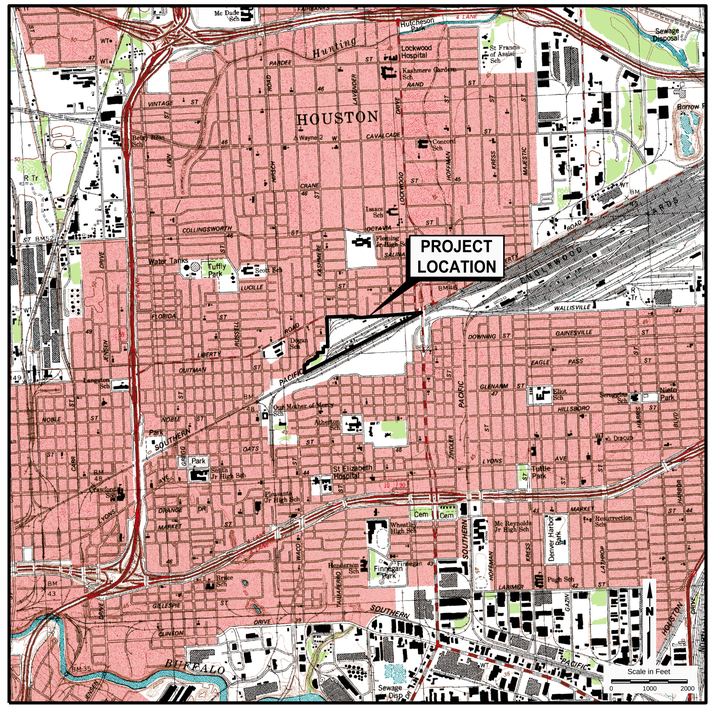
PASTOR, BEHLING & WHEELER, LLC
ROUND ROCK, TEXAS
TEXAS ENGINEERING FIRM NO. 4760

DRAWING INDEX

SHEET NO.	TITLE
G1	COVER SHEET AND INDEX
C1	SITE DEMOLITION PLAN
C2	GRADING PLAN - PROPOSED
C3	ROAD PROFILE AND DETAILS
C4	MISCELLANEOUS DETAILS
C5	MISCELLANEOUS DETAILS
C6	MISCELLANEOUS DETAILS

CALL BEFORE YOU DIG!

CONTACT TEXAS ONE CALL CENTER
AT LEAST 48 HOURS BEFORE YOU DIG, DRILL OR BLAST
1-800-545-6005
OR (811)
CONTACT UNION PACIFIC CALL CENTER
1-800-336-9193
TERMINAL SUBDIVISION, MILE POST 358.6 TO 359.4



GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL WORK WITH APPROPRIATE UNION PACIFIC RAILROAD REPRESENTATIVES. CONTRACTOR SHALL COORDINATE ALL WORK WITHIN PUBLIC RIGHT-OF-WAY WITH THE APPROPRIATE CITY OF HOUSTON REPRESENTATIVES. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY NECESSARY PERMITS FOR CONSTRUCTION WITH CITY OF HOUSTON.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING ELEVATIONS, DIMENSIONS, STRUCTURE LOCATIONS, UTILITY LOCATIONS AND ALL OTHER EXISTING SITE CONDITIONS PRIOR TO INITIATING CONSTRUCTION. EXISTING INFORMATION SHOWN ON THE DRAWINGS HAS BEEN OBTAINED FROM AVAILABLE RECORDS AND IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. EXISTING INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR AND ANY FAILURE BY THE CONTRACTOR TO VERIFY EXISTING CONDITIONS WILL NOT RELIEVE HIM FROM THE RESPONSIBILITY OF COMPLETING THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR SHALL EXPLORE AHEAD OF HIS ACTIVITIES TO DETERMINE THE EXACT LOCATION OF EXISTING STRUCTURES AND UTILITIES. EXISTING STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL SHALL BE SUPPORTED AND PROTECTED FROM INJURY BY THE CONTRACTOR. IF EXISTING STRUCTURES OR UTILITIES NOT DESIGNATED FOR REMOVAL ARE BROKEN OR INJURED, THEY SHALL BE RESTORED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. ALL CONTRACTOR TRUCKS SHALL BE CLEAN BEFORE LEAVING PROJECT LOCATION TO AVOID SPILLAGE OF MATERIAL ON PUBLIC ROADWAYS. CONTRACTOR IS RESPONSIBLE FOR CLEANING UP ALL MATERIAL SPILLS ON PUBLIC AND PRIVATE ROADS.
5. ACCESS TO THE PROJECT LOCATION MAY BE AFFECTED BY ADVERSE WEATHER. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO THE PROJECT LOCATION AT ALL TIMES.

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

STATE OF TEXAS — PATRICK J. BEHLING — 79872 — LICENSED PROFESSIONAL ENGINEER

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_G1.DWG

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

COVER SHEET AND INDEX

DATE: OCTOBER 2015 | SHEET NO. **G1** | SEQ NO. **1**

Kashmere
Solo
Lavender
Clementine
Wylie
Erastus
Cushing
Lockwood
Liberty Road

HWPW

Englewood
Intermodal Yard

ACCESSIBLE ENTRANCE INTO PROPERTY

EXISTING FIRE HYDRANT TO BE REMOVED. CONTRACTOR TO COORDINATE WITH UPRR WATER SERVICE PERSONNEL AT (713) 678-5278 PRIOR TO ANY WORK.

SAW CUT AND REMOVE CONCRETE IN THIS AREA TO ALLOW SOIL CAP TIE-IN TO NATIVE SOIL

EXISTING CONCRETE PADS TO REMAIN IN PLACE (TYP)

EXISTING FENCE TO BE REMOVED WITHIN THE SOIL CAP CONSTRUCTION AREA AND SALVAGED FOR FUTURE USE

EXISTING CONCRETE BARRIERS ALONG GRAVEL ROAD TO BE REMOVED AND STORED ON-SITE FOR REPLACEMENT AFTER CAP AND ROAD CONSTRUCTION HAS BEEN COMPLETED

APPROXIMATE AREA OF SEVERAL PILES OF USED CONCRETE RAILROAD TIES, BALLAST, RAILS, AND OTHER ITEMS THAT ARE TO BE REMOVED.

ATTENTION APPROXIMATE LOCATION OF 2" AND 8" GAS LINES

SEE INSET A FOR THIS AREA

AREA A

AREA B

AREA C

AREA D

AREA E

AREA F

EXISTING STORM WATER MANHOLES TO REMAIN IN PLACE. PROVIDE PROTECTION DURING EXCAVATION ACTIVITES

EXISTING UNDERGROUND OIL/WATER SEPARATOR TANK TO BE REMOVED (SWMU 11)

EXISTING CONCRETE WALL AND PLATFORM TO BE REMOVED

EXISTING FIRE HYDRANT TO BE REMOVED. CONTRACTOR TO COORDINATE WITH UPRR WATER SERVICE PERSONNEL AT (713) 678-5278 PRIOR TO ANY WORK.

WELL TO REMAIN. MODIFICATIONS TO EXISTING SURFACE COMPLETION IN ORDER TO ACCOMMODATE FOR CAP WILL BE COMPLETED BY OTHERS.

ATTENTION APPROXIMATE LOCATION OF LEVEL 3 FIBER OPTIC LINE (40-45 FEET BGS)

ATTENTION APPROXIMATE LOCATION OF QWEST FIBER OPTIC LINE (5-20 FEET BGS)

EXISTING POWER POLES TO BE REMOVED

EXISTING CONCRETE CONTAINMENT WALL TO BE REMOVED

EXISTING SECURITY FENCING TO BE REMOVED AND SALVAGED FOR FUTURE USE

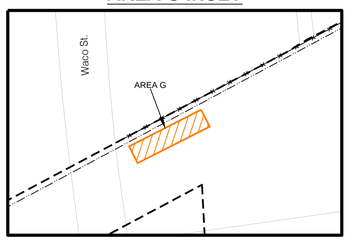
EXISTING CONCRETE BARRIERS ALONG GRAVEL ROAD TO BE REMOVED AND STORED ON-SITE FOR REPLACEMENT AFTER CAP AND ROAD CONSTRUCTION HAS BEEN COMPLETED

APPROXIMATELY 570' SOUTHWEST TO AREA G (SEE INSET)

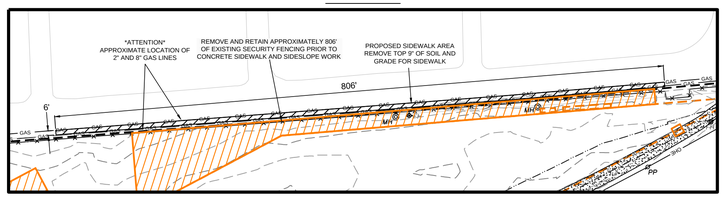
MW-14, MW-15C, MW-15A, MW-15B, MW-17, MW-17C, MW-30A, MW-72B, MW-23C, MW-52A, MW-31A, MW-19C, MW-20A, MW-56B, MW-55A, MW-73B, MW-16, MW-39B, MW-12C, MW-12A, MW-12B, MW-40B, MW-42B, TW-41B, MW-41B, P-11, MW-01A, MW-08, P-12, MW-09, MW-04, P-10, MW-07, MW-21C, MW-05, MW-64A, MW-57B, MW-57A, MW-58A, MW-18C, MW-18A, TW-56A

NOTE:
All existing vegetation, debris and other items within the limits of the proposed soil cap area shall be removed and managed by contractor in accordance with the specifications and owner requirements.

AREA G INSET



INSET A



0 100' 200'
Scale in Feet

LEGEND

- UPRR Property Boundary
- Existing Grade Contour (0.5 ft Interval)
- 49 Existing Grade Contour (1 ft Interval)
- Existing Fence
- FH Existing Fire Hydrant
- MH Existing Manhole
- PP Existing Power Pole
- OHE Overhead Electric Line
- Existing Guy Wire
- Existing Fiber Optic Line
- GAS Existing Gas Line
- Existing Concrete Pad
- Existing Gravel Road
- Existing Monitoring Well
- Existing Monitoring Well To Be Plugged and Abandoned (By Others)
- Extent of Soil Cap
- Area to Be Excavated and Consolidated in Soil Cap Area
- Existing Concrete Barriers

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

STATE OF TEXAS — PATRICK J. BEHLING — 79872 — LICENSED PROFESSIONAL ENGINEER

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C1.DWG

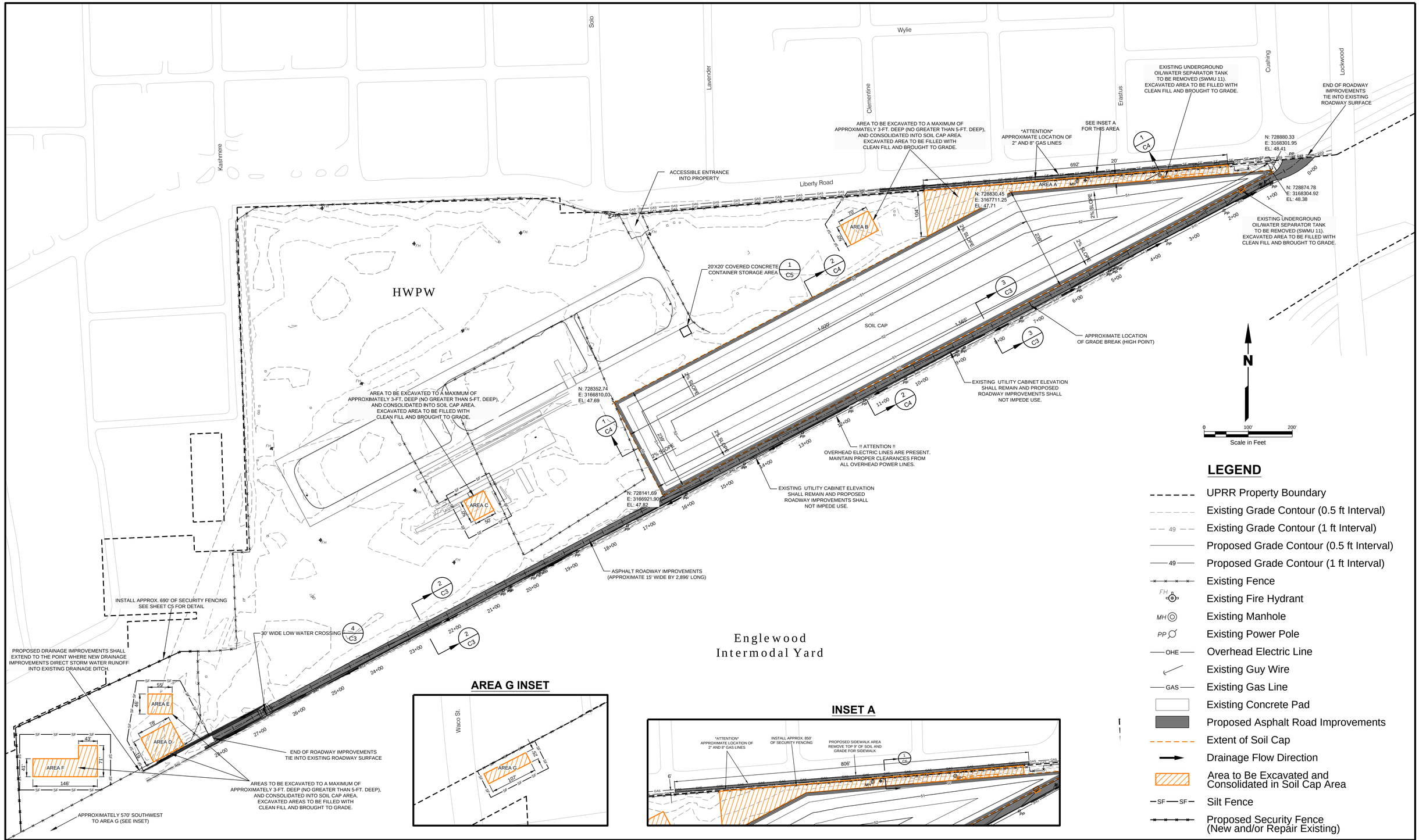
UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

DEMOLITION PLAN

DATE: OCTOBER 2015 | SHEET NO. C1 | SEQ NO. 1

ATTACHMENT 2A-3



REFERENCE

NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

STATE OF TEXAS
PATRICK J. BEHLING
79872
LICENSED PROFESSIONAL ENGINEER

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C2.DWG

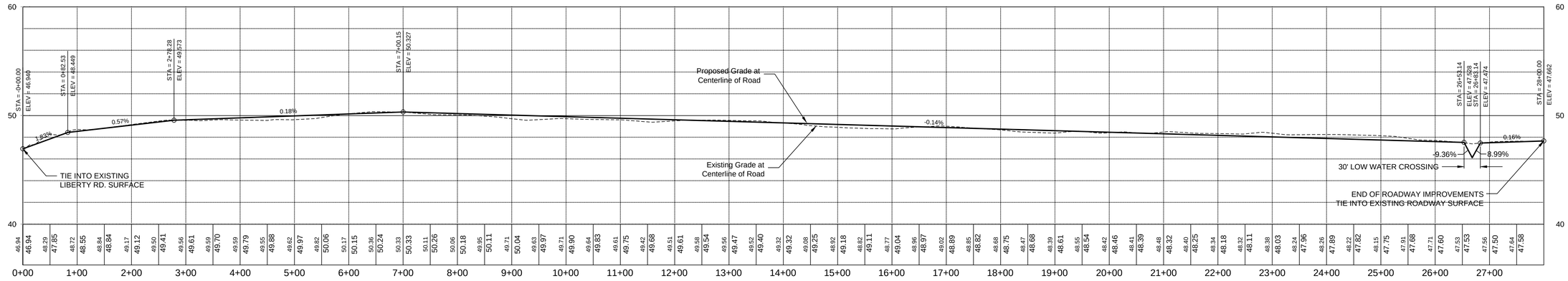
UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

GRADING PLAN

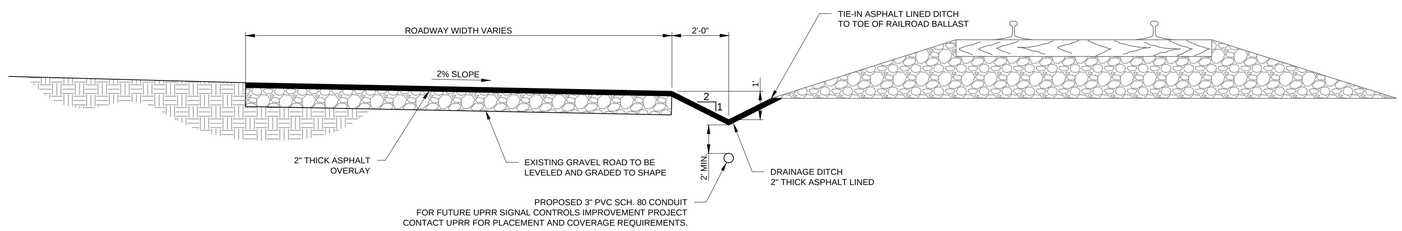
DATE: OCTOBER 2015 | SHEET NO. C2 | SEQ NO. 1

ATTACHMENT 2A-3

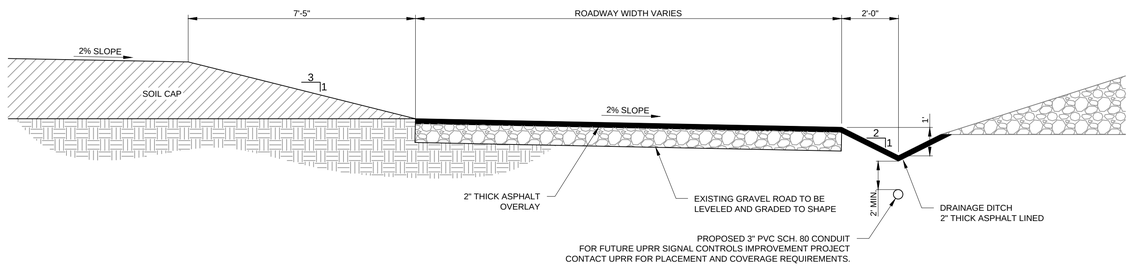


1 / C3 ACCESS ROAD PROFILE

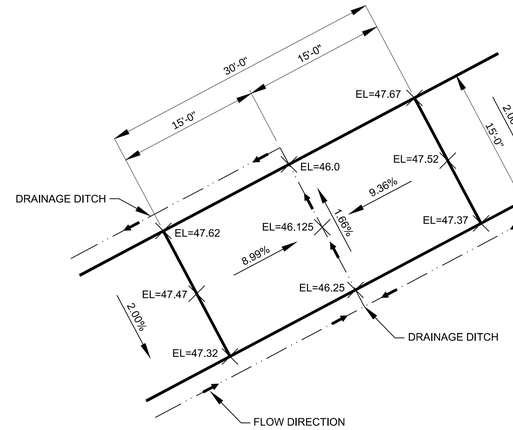
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=100'



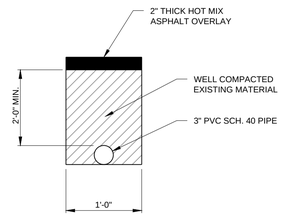
2 / C3 ACCESS ROAD DETAIL
NOT TO SCALE



3 / C3 ACCESS ROAD DETAIL
NOT TO SCALE



4 / C3 LOW WATER CROSSING
NOT TO SCALE



5 / C3 CONDUIT INSTALLATION DETAIL
NOT TO SCALE

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

STATE OF TEXAS — PATRICK J. BEHLING — 79872 — LICENSED PROFESSIONAL ENGINEER

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

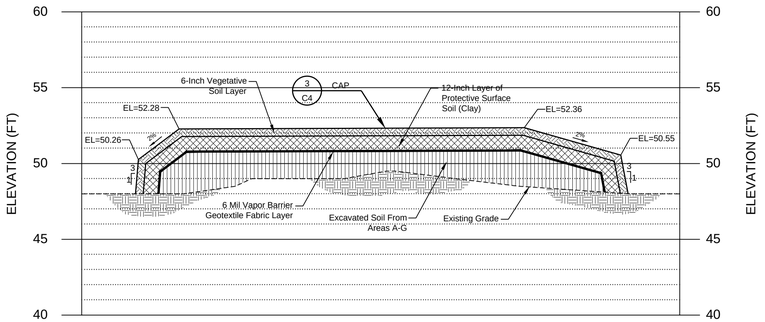
DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C3.DWG

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

ACCESS ROAD PROFILE AND DETAILS

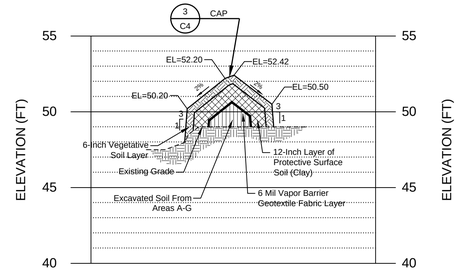
DATE: OCTOBER 2015 | SHEET NO. C3 | SEQ NO. 1



1 C4 SECTION

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=200'

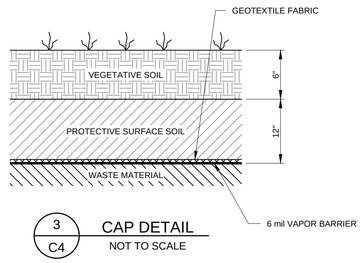
0 5
0 200



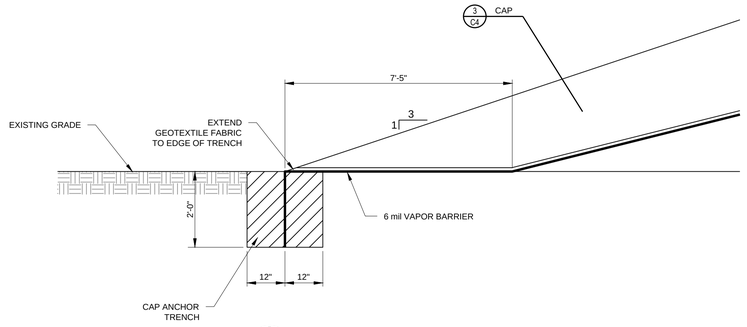
2 C4 SECTION

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=200'

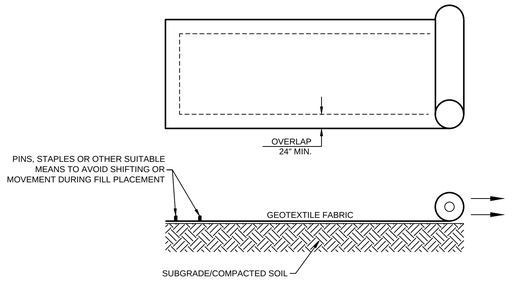
0 5
0 200



3 C4 CAP DETAIL
NOT TO SCALE



4 C4 ANCHOR TRENCH DETAIL
NOT TO SCALE



5 C4 GEOCOMPOSITE/GEOTEXTILE FABRIC DETAIL
NOT TO SCALE

NOTES:
1. EXCAVATE AND REPLACE POCKETS OF VERY WEAK OR PUMPING SOILS WITH GRANULAR FILL.
2. PLACE GEOFABRIC DIRECTLY ON THE PREPARED SUBGRADE. INSTALL ROLLS IN THE DIRECTION OPPOSITE THE CROSS-SLOPE. ROLL THE FABRIC OUT AS FLAT AND TIGHT AS POSSIBLE WITH NO FOLDS.
3. OVERLAP ADJACENT ROLLS A MINIMUM OF 24".
4. SECURE THE GEOFABRIC IN PLACE WITH PINS, STAPLES, PILES OF SOIL, GRANULAR COVER MATERIAL OR OTHER SUITABLE MEANS TO AVOID SHIFTING OR MOVEMENT DURING FILL PLACEMENT.
5. OVERLAP DAMAGED GEOFABRIC BY A MINIMUM OF 24" IN ALL DIRECTIONS.
6. GEOTEXTILE SHALL BE NON-WOVEN, CONTINOUS OR STAPLE FILAMENT, NEEDLE-PUNCHED POLYPROPYLENE OR POLYESTER SUITABLE FOR AASHTO M-288 CLASS 2 APPLICATIONS. YARN SHALL BE ORIENTED INTO A STABLE NETWORK THAT MAINTAINS ITS STRUCTURE DURING HANDLING, INSTALLATION, AND LONG-TERM SERVICE.

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

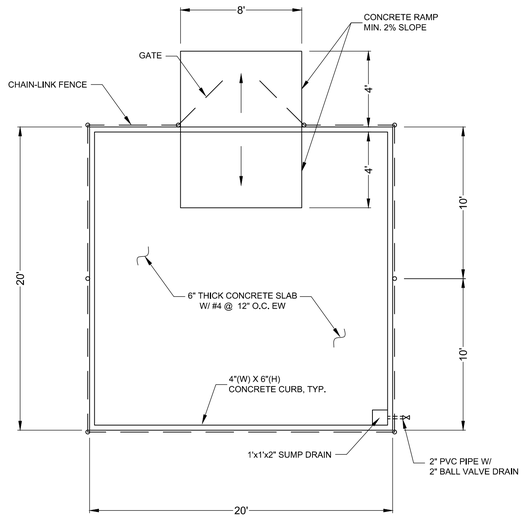
DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C4.DWG

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

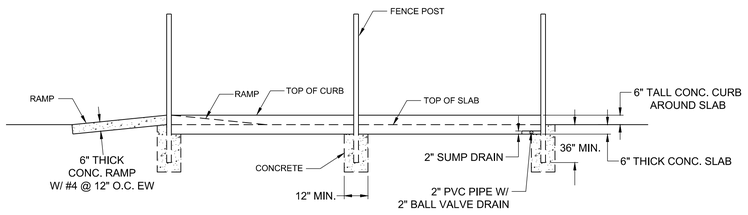
MISCELLANEOUS DETAILS

DATE: OCTOBER 2015 | SHEET NO. C4 | SEQ NO. 1



1 / C5 CONCRETE CONTAINER STORAGE AREA-PLAN

NOT TO SCALE



2 / C5 CONCRETE CONTAINER STORAGE AREA -ELEVATION

NOT TO SCALE

NOTES:

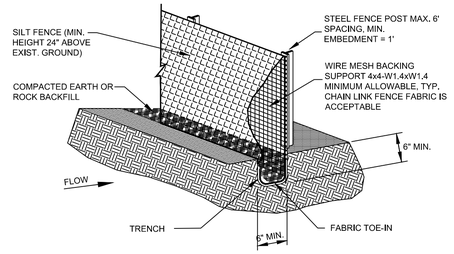
1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO START OF LAND DISTURBING ACTIVITIES.

2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE ENGINEER.

3.EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.

4. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE AT THE CONTRACTOR'S EXPENSE.

5. ALL DISTURBED AREAS SHALL BE SEEDED/HYDROMULCHED & MAINTAINED UNTIL 70% VEGETATION COVER IS OBTAINED.



ISOMETRIC PLAN VIEW

N.T.S.

SILT FENCE DETAIL

N.T.S.

SILT FENCE GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW, WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE

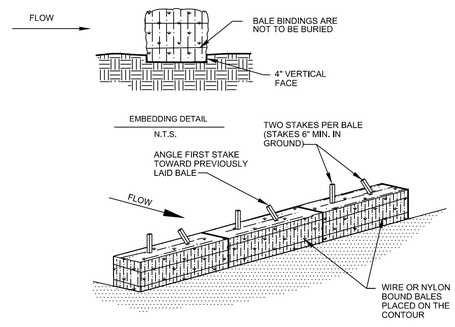
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO LLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITHCOMPACTEDMATERIAL.

4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST, THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTEREACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE ISCOMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILTSHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.



STRAW BALE DIKE

N.T.S.

STRAW BALE DIKE GENERAL NOTES:

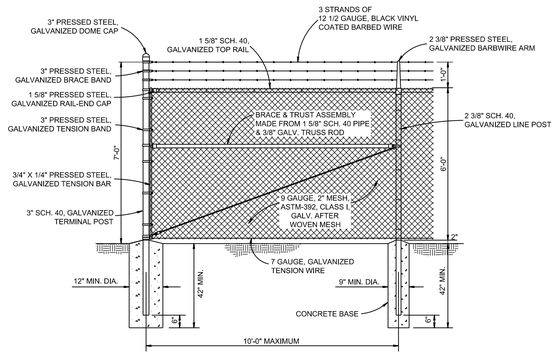
1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR INCHES.

2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" X 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.

3. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL EVENT. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

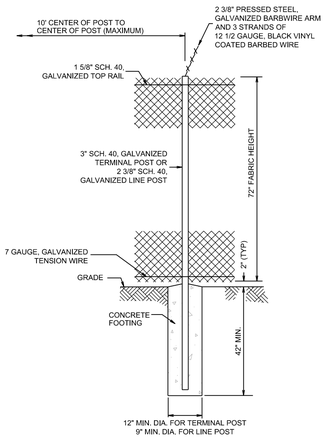
4. WHEN SILT REACHES A DEPTH OF 6 INCHES, IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

5. AFTER THE DISTURBED AREAS OF THE SITE ARE COMPLETELY STABILIZED, THE BALES SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SPOIL DISPOSAL SITE.



3 / C5 CHAIN LINK FENCE DETAIL

NOT TO SCALE



SIDE VIEW

NOTES:

FABRIC:
72" 11 GA. GAW (2" MESH) T&T CHAIN-LINK FABRIC.
TOP RAIL:
1 5/8" O.D. SCH. 40 PIPE, 2.27 LBS. PER FOOT. TOP RAIL 21' IN LENGTH, JOINED WITH 1 5/8" SLEEVE.
LINE POST:
2" O.D. SCH. 40 PIPE, 2.72 LBS. PER FOOT. LINE POST SET 10' ON CENTER MAXIMUM SPACING.
CONCRETE FOOTING: 9" DIA., 24" DEPTH.
TERMINAL POST:
2 1/2" O.D. SCH. 40 PIPE, 3.65 LBS. PER FOOT.
CONCRETE FOOTING: 9" DIA., 36" DEPTH.
GATES:
FRAMEWORK OF 2 1/2" SCH. 40 PIPE, 3.65 LBS. PER FOOT.
GATES BRACES AND TRUSSED AS NECESSARY. SAME FABRIC AS FENCE. BARBED WIRE INCLUDED ON ALL GATES.
GATE POST:
4" O.D. SCH. 40 PIPE, 9.10 LBS. PER FOOT.
CONCRETE FOOTING: 9" DIA., 36" DEPTH.
TENSION WIRE:
9 GA. SMOOTH GALVANIZED TENSION WIRE ATTACHED TO BOTTOM OF FENCE FABRIC WITH 9 GA. ALUMINUM HOG RING SPACED 24" ON CENTER.
BARBED WIRE:
3 STRANDS OF 4 PT. GALV. CLASS III BARB WIRE ON 3 WIRE PRESSED STEEL BARB WIRE ARM.
FITTINGS:
HEAVY BRACED BAND AND CARRIAGE BOLT, PRESSED STEEL RAIL-END, 3 WIRE PRESSED STEEL BARB WIRE ARM, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, HEAVY TENSION BAND AND CARRIAGE BOLT.
TIE WIRE:
2" 9 GA. STEEL EASY TWIST TIE WIRE AND 1 5/8" 9 GA. STEEL EASY TWIST TIE WIRE SPACED 15" ON CENTER FOR LINE POSTS AND 24" ON CENTER FOR RAILS
POST FOOTINGS:
TRUCK POURED CONCRETE

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

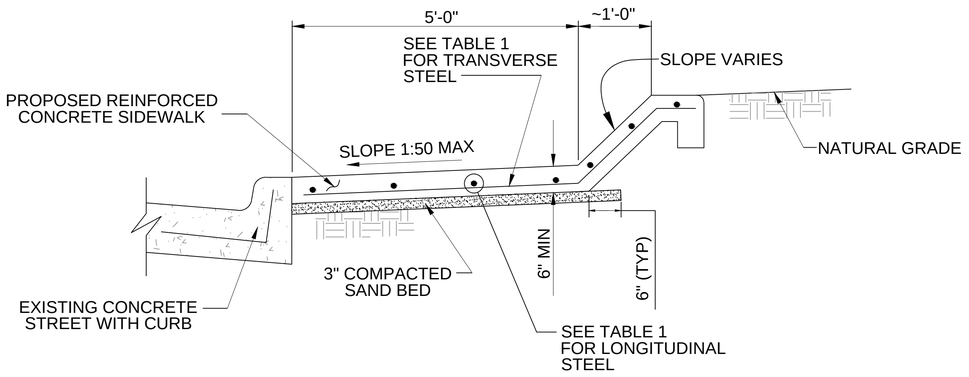
DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C5.DWG

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

MISCELLANEOUS DETAILS

DATE: OCTOBER 2015 | SHEET NO. C5 | SEQ NO. 1



1 / C6 CONCRETE SIDEWALK DETAIL

NOT TO SCALE

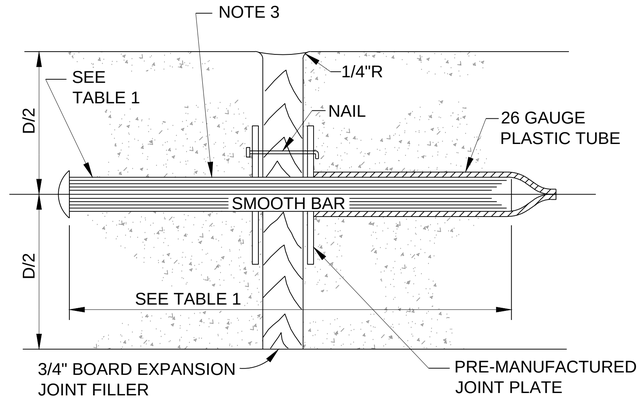
TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 1/2" THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc = 3,000 PSI AND fy = 60,000 PSI

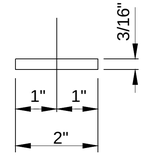
SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL #3 BARS			TRANSVERSE STEEL #3 BARS SPACING (IN)
		NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

NOTES:

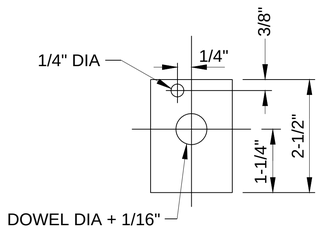
1. CONTRACTOR SHALL COORDINATE WITH CITY OF HOUSTON ON ALL WORK WITHIN PUBLIC RIGHT-OF-WAY AND ACQUIRE ANY NECESSARY PERMITS. ALL WORK SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON'S DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARDS AND SPECIFICATIONS.
2. 6X6 - W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
3. REINFORCING CONCRETE SIDEWALK THRU DRIVEWAYS OPENING SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON DRAWING "REINFORCED CONCRETE DRIVEWAY DETAILS ON CURB TYPE STREETS".
4. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
5. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.



SECTION
DOWEL TYPE EXPANSION JOINT
N.T.S.



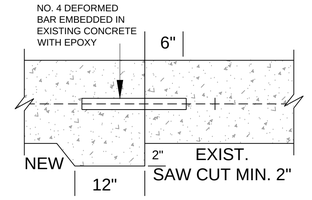
PLAN - JOINT PLATE



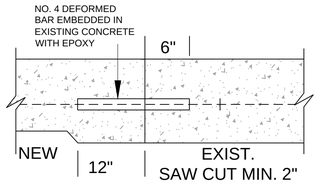
ELEVATION - JOINT PLATE
N.T.S.

TABLE 1

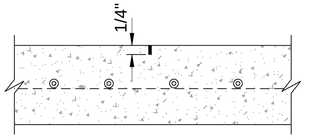
PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACING		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12



SECTION
SIDEWALK TO EXISTING SIDEWALK



SECTION
SIDEWALK TO EXISTING DRIVEWAY



SECTION
CONTROL JOINT
N.T.S.

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINTS TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 36' FEET. MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5' FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN 2" MIN. COVER.

2 / C6 SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

NOT TO SCALE

REFERENCE	NO.	REVISIONS	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PATRICK J. BEHLING, P.E. NO. 79872 ON OCTOBER 20, 2015.

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS
TEXAS ENGINEERING FIRM NO. 4760

DESIGNED BY:	PJB
DRAWN BY:	AJD
CHECKED BY:	PJB
APPROVED BY:	PJB
FILE NAME:	1358_C6.DWG

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

MISCELLANEOUS DETAILS

DATE: OCTOBER 2015 | SHEET NO. C6 | SEQ NO. 1

ATTACHMENT 2B

PROPOSED WELL DESIGN

ATTACHMENT 2B – 1 PROPOSED MONITORING WELL NETWORK
ATTACHMENT 2B – 2 TYPICAL MONITORING WELL CONSTRUCTION

Introduction

As detailed in RAP Worksheet 2.1, the following wells are proposed to be installed:

1. Point of Exposure Wells:
    a. B-TZ/B-CZ: PMW-82B, PMW-83B, PMW-84B
    b. C-TZ: PMW-83C and PMW-85C
2. Corrective Action Observation Wells:
    a. PMW-86C
3. Replacement Wells:
    a. A-TZ: MW-18AR and MW-22AR
    b. B-TZ: MW-22BR

The proposed new wells and replacement wells are shown on Attachment 2B-1. Monitoring wells MW-22AR and 22BR are to be installed to replace damaged wells MW-22A and MW-22B, respectively. Details of the well installation are discussed below.

Permanent Monitoring Well Installation

Soil borings for monitoring wells will be advanced using hollow stem auger, mud rotary, or sonic drilling methods. Soil samples will be collected continuously from each boring and will be logged in the field for lithology and sedimentary structure. Soil headspace samples will be collected every two feet and screened in the field for total organic vapor concentrations. In addition, soil core samples will be visually inspected for contamination and non-aqueous phase liquid (NAPL) presence.

Soil borings that will be used for monitoring well installation will be advanced as necessary to identify the top and base of the targeted groundwater bearing-unit (GWBU) (i.e., A-TZ, B-TZ, C-TZ). Based on the boring logs for previous monitoring wells drilled at the Site, it is anticipated that these borings will be advanced to the following maximum depths (subject to field conditions):

- A-TZ: approximately 30 feet below ground surface (bgs)
- B-TZ/B-CZ: approximately 36 feet to 40 feet bgs
- C-TZ: approximately 70 feet bgs.

Although the proposed borings for wells below the A-TZ will be located away from areas where NAPL has been identified, surface or isolation casing (permanent isolation casing or temporary isolation casing using sonic drilling techniques) may be installed prior to penetration of any low permeability confining unit.

Permanent monitoring wells will be constructed after the total depth of the borehole is reached. Monitoring wells will be constructed using 2-inch or larger diameter, flush-joint-threaded Schedule 40 PVC casing and 0.010-inch slotted PVC screen. Other well casing and screen materials (i.e., stainless steel) may be used instead of PVC depending on the potential for exposure to NAPL. The specific well design will be determined in the field based on the observed lithology with the goal of screening the well at the base of the targeted GWBU. It is anticipated that each well screen will be approximately 10 feet in length, but shorter screen intervals may be installed for the B-CZ wells. After the boring is completed to the total depth, the casing and screen will be lowered into the borehole through the augers or sonic isolation casing.

Once the casing and screen are in place, the remaining well materials (filter sand, bentonite pellets, and cement/bentonite grout) will be added to the hole as the augers/sonic casings are slowly removed. Depths

to the top of the annular materials will be measured with a weighted, calibrated tape and recorded on the Well Completion Log. A bentonite seal layer will be installed on top of the filter sand and will be a minimum of 2 feet in thickness. The remainder of the borehole annulus will be filled with a Portland/bentonite grout (or bentonite pellets). Each well will be completed with either a flush-grade surface completion with a 2-foot by 2-foot pad or above grade within a protective casing on a 4-foot-by-4-foot concrete pad. If an above grade completion is constructed, bollards or bumper guards should be installed around the surface completion. Typical monitoring well completion details are shown on Attachment 2B-2. After construction, the position and elevation of each monitoring well will be surveyed by a licensed, professional surveyor relative to Texas State Plane Coordinates and mean sea level.

Monitoring Well Development

A minimum of 24 hours shall elapse after well construction and before well development to allow for bentonite hydration and grout set. Development will consist initially of surging and bailing or pumping; however, the specific development method will ultimately be decided by the field personnel based on the specific conditions encountered. Temperature, pH, specific conductivity, and turbidity will be monitored during purging. Development will continue until the well produces water with stable field parameter readings (i.e., temperature, pH, conductivity) and turbidity is below 10 NTU. At least five casing volumes of water will be removed from the well during development unless the well pumps dry. If the turbidity is not below 10 NTU after 10 casing volumes of water are removed from the well, then the final turbidity will be recorded and more aggressive development procedures such as air lifting may be considered.

Monitoring Well Documentation

Documentation of well installation and development will include field boring logs, monitoring well installation forms, well development forms, and any photographs. For wells installed within the City of Houston right of way (ROW), city permits will be required prior to installing the wells. Investigation-derived wastes (IDW), such as soil cuttings, decontamination fluids, or development water, generated from the drilling activities will be stored and disposed of in accordance with state and federal requirements. Documentation of the wastes disposed of as part of the well installation will be maintained.

Following installation, a certification report will be submitted to the Texas Commission on Environmental Quality (TCEQ) detailing the well installation and related documentation.

FIGURES

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).
4. **- Corrective Action observation well.

N

Approx. Scale in Feet

0 200 400

Source:
Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

MW-67B
PMW-84B
MW-65D**
PMW-83B
PMW-83C
MW-28C
MW-63B
MW-68C
MW-33BR
MW-36B
MW-36D**
MW-45C
MW-54C
MW-66D**
MW-36A
MW-44A (DNAPL)
MW-46C (DNAPL)
MW-25A
**PMW-82B
MW-26A
MW-34CR
MW-44C (DNAPL)
MW-35B**
MW-35A
MW-32B
MW-70B (DNAPL)
MW-57A (DNAPL)
MW-18AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-48C
**MW-49B
MW-61A
MW-38B
MW-12B (DNAPL)
MW-42B
MW-62B
MW-41B (DNAPL)
MW-59A
MW-59B
MW-59D**
MW-69A
MW-75B (DNAPL)
P-11
MW-02
MW-01A
MW-78A (DNAPL)
MW-80B
MW-22BR**
MW-10A
MW-08
P-12
MW-10B
MW-11A
MW-22AR**
MW-11B
MW-07
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

Lucille
Fontinot
Lelia
Wipprecht
Solo
Erastus
Pershing
Lockwood
Wylie
Lavender
Clementine
Kashmere
Liberty Road
Harlem
Sudan
Erastus

UNION PACIFIC RAILROAD CO.

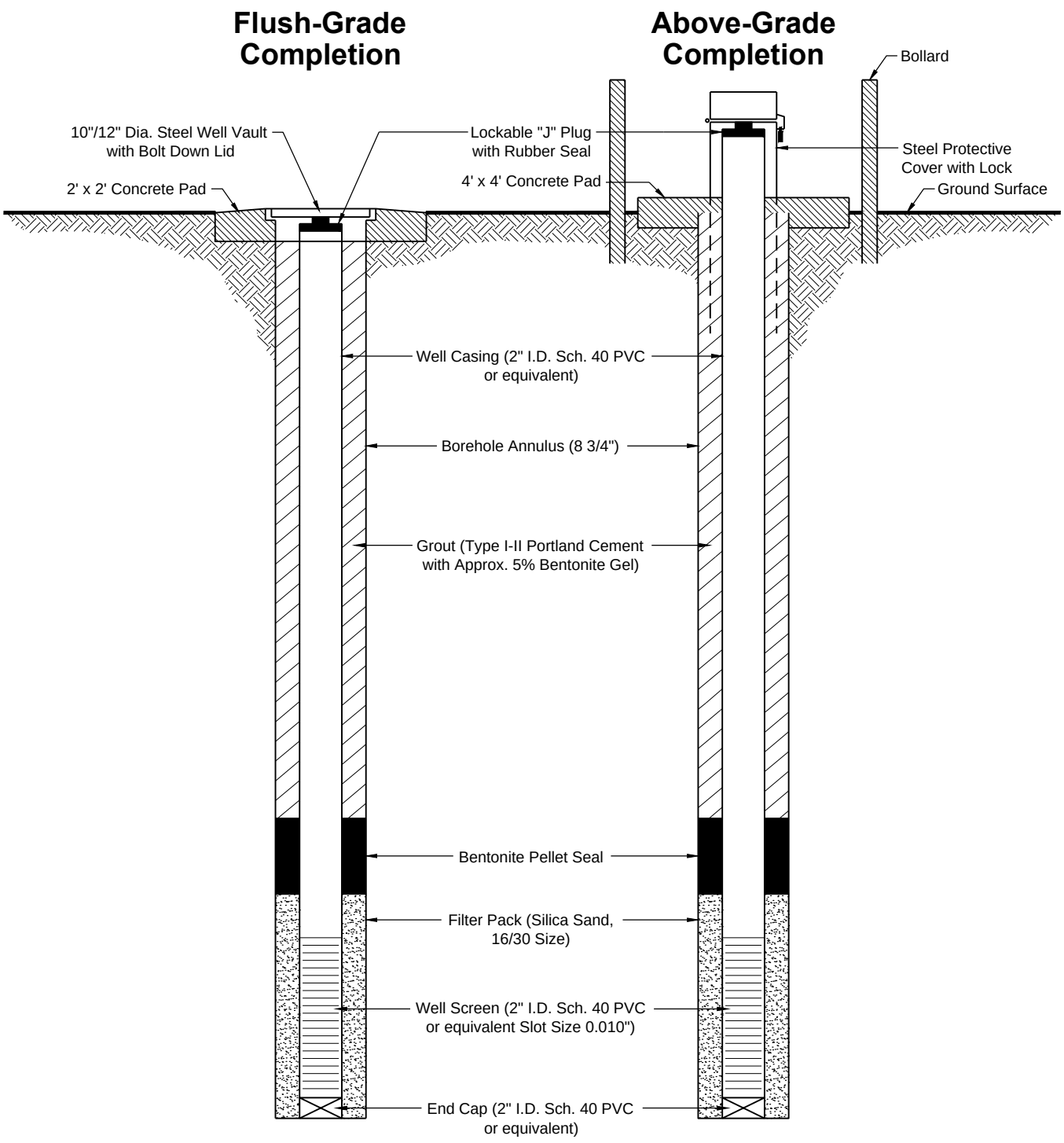
HOUSTON WOOD PRESERVING WORKS

Attachment 2B-1

PROPOSED MONITORING WELL WELL LOCATION MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



NOT TO SCALE

Notes:
Wells completed below the A-TZ will be installed with isolation casings (PVC or sonic casing, if drilled with sonic methods) isolating the shallow zone.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2B-2

TYPICAL MONITORING WELL CONSTRUCTION

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Complete this worksheet when a PMZ is proposed as part of the response action. Include in Attachment 2D a map of the proposed PMZ with alternate POE(s) and attenuation monitoring points identified and the current groundwater PCLE zone. If a PMZ is not proposed, do not submit this worksheet.

Groundwater-bearing unit **A-TZ**

Repeat this worksheet for each groundwater-bearing unit for which a PMZ is proposed.

Groundwater classification **X** 2 ____ 3

Provide justification as to why the PMZ is appropriate in accordance with §350.33(f)(4)(A). Include supporting documentation in Attachment 2E.

The on-site and off-site PMZs proposed as a response action for the A-TZ PCLE zone (Attachment 2D-1) ensures that COCs will not pose a potential unacceptable risk to human health or the environment as long as the AALs are not exceeded at the respective AMPs, and COC concentrations less than cPCLs at the proposed Alternate POE wells. PMZs are appropriate for this PCLE zone based on a relatively low groundwater velocity, overall stable/declining COC concentrations, the proposed institutional controls (deed recordation (on-site PMZs) and restrictive covenants (off-site PMZs)) on use of groundwater within the PCLE Zone, and the absence of any existing water supply wells within ½-mile of the Site. In addition, there are no surface water bodies at the Site or near the proposed PMZ; therefore, there is no potential for contaminating surface waters that would be hydraulically connected to groundwater. The City of Houston provides municipal water services for all properties within the Affected Property, so there is no human health complete pathway associated with this GWBU. The Site is also within the jurisdiction of the Harris-Galveston Subsidence District (HGSD), which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

The on-site and off-site PMZs proposed for the A-TZ PCLE zones consists of two components: 1) filing of institutional controls including deed recordation (UPRR-Owned properties) and restrictive covenants (off-site properties, City of Houston ROW) prohibiting the use of groundwater within the PMZs; and 2) performance of ongoing groundwater monitoring at the proposed AMPs and POE wells. The proposed deed recordation and restrictive covenant language, to be filed in the Harris County deed records, is included in Appendix 4.

As detailed in Attachment 1A, the PMZs for A-TZ were established using the July/August 2014 groundwater analytical data collected from the Site, in conjunction with trend analysis for groundwater analytical data from 2010 through 2014 (10 semi-annual sampling events). Comparing the maximum groundwater analytical data from the July/August 2014 groundwater sampling event to cPCLs, concentrations of 23 target COCs exceeded their respective cPCLs in at least one of the four GWBUs. For the A-TZ, the following 12 COCs were detected above cPCLs:

VOCs

- Benzene
- Methylene Chloride
- Vinyl Chloride

SVOCs

- 2,4-Dimethylphenol
- 2-Methylnaphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Bis(2-chloroethoxy)methane

- Chlorobenzene (A-TZ only, one well)
- Dibenzofuran
- Naphthalene
- Phenol

Of those COCs, benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene are the most prominent COCs where the cPCL exceedances for these COCs define the PCLE Zone in the A-TZ. Therefore, the trend analyses and attenuation action levels were calculated for these five COCs (Attachment 2E). None of the COCs listed above were detected in the A-TZ at concentrations that exceeded the $^{Air}GW_{Inh\text{-}V}$ PCL.

The overall groundwater flow across the Site in the A-TZ is to east, until the Lockwood Street Bridge area on the far east side of the Site. As discussed in the APAR Addendum (PBW, 2009), there is a City of Houston 60-inch sanitary sewer line that cuts across the east end of the Site (Attachment 1A, Figure 5A-1) that flows north to south just west of the Lockwood Street Bridge. Based on a review of the City of Houston engineering drawing files for the sanitary sewer line, the sewer line potentially intersects the saturated A-TZ unit, and may be affecting the groundwater potentiometric surface elevation of the A-TZ (Attachment 1A, Figure 4C-1).

PBW installed a small diameter piezometer MW-69A in June 2010 in the City of Houston ROW along the west side of the sanitary sewer line south of MW-49A (Attachment 1A, Figure 1A) to evaluate the potential for site-specific COCs affecting the sanitary sewer. The location of the piezometer was chosen to evaluate if COCs in groundwater are travelling along the west side of the sanitary sewer line. Groundwater data from monitoring well MW-59A indicates that the COCs were not detected above PCLs east of the sanitary sewer line. In addition, PBW collected grab samples of fluid from the sanitary sewer line upgradient, within the Site, and downgradient of the Site to evaluate potential discharge of site-specific COCs detected in the A-TZ into the wastewater line (PBW, 2010). Samples from the sanitary sewer were collected from three manholes using a peristaltic pump and tubing inserted through the manhole covers.

Based on the analytical results from July 2010 through July/August 2014, none of the site-specific COCs have been detected above TRRP PCLs in the groundwater samples collected from MW-69A. Also, sanitary sewer water analytical results from the three sanitary sewer samples were also compared to TRRP Tier 1 PCLs for groundwater, even though the fluid in the line is not considered groundwater. Of the three samples collected in 2010, the only sample with concentrations greater than PCLs was the upgradient sample SSW1 that had a detection of bis(2-ethylhexl)phthalate (0.0092 mg/L) above the $^{GW}GW_{ing}$ PCL of 0.006 mg/L; however, bis(2-ethylhexyl)phthalate is a common laboratory contaminant (as cited in 30 TAC§350.71(k)(2)(B)). The sanitary sewer sample analytical results suggest that there is not a significant mass loading of COCs from groundwater into the sanitary sewer.

As discussed in Worksheet 2.3, a TI Zone will also be established for areas where DNAPL has been detected in monitoring wells or observed in the soil boring log for the GWBUs on site and off site. Details of the TI Zone are provided in Attachment 2G.

In accordance with §350.33(f)(4)(A), both PMZs for the A-TZ Unit will be actively monitored (semi-annually). MNA will be used as a control response for the Site.

Is the alternate POE proposed to be beyond the current limits of the PCLE zone? **X** Yes ___ No
If yes, how far? Approximately 400 feet (§350.37(l) or (m) as applicable)
Is it to be off-site? **X** Yes ___ No
On an off-site property that currently does not contain a residential-based groundwater PCLE zone?
X Yes ___ No -

If yes and this is a Class 2 groundwater, provide the basis for concluding that this groundwater does not have a reasonably anticipated future beneficial use (§350.37(l)(3)).

The residential-based PCLE zone extends onto the off-site properties (to the north and to the east in the residential area), and on to the City of Houston ROW. The proposed PMZs extend to the closest monitoring wells where COC concentrations in groundwater are less than the cPCL based on the groundwater data collected in July/August 2014. As previously discussed, the City of Houston provides municipal water services for all properties within the Affected Property, so there is no current beneficial use for the GWBU. The Site is also within the jurisdiction of the HGSD, which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions for small domestic wells, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

Therefore, with the City of Houston providing water for the area, and financial disincentives placed on shallow groundwater use by the HGSD (which the Texas Supreme Court ruled in favor of the HGSD in 1977 to protect public welfare by limiting harmful pumping, which was causing ground subsidence of the land resulting in flooding (*Beckendorff v. Harris-Galveston Coastal Subsidence District (1977)*), the shallow groundwater does not have a reasonably anticipated future beneficial use in the area.

Is NAPL present? **X** Yes ___ No
If so, describe how the response action will achieve the performance criteria in §350.33(f)(4)(E).

§350.33(f)(4)(E) The person is required to reduce NAPLs which contain COCs in excess of PCLs within a plume management zone to the extent practicable. In the determination of adequate NAPL reduction, the executive director may consider conformance with the following criteria and other relevant factors:

(i) readily recoverable NAPLs have been recovered;

(ii) the NAPLs will not generate explosive conditions as defined in §350.31(c) of this title (relating to General Requirements for Remedy Standards);

(iii) the NAPLs will not discharge to the ground surface, to surface waters, to structures, or to other groundwater-bearing units;

(iv) the vertical and lateral extent of NAPLs will not increase under natural conditions, or sufficient NAPLs have been recovered such that an active recovery system can be demonstrated to effectively control or contain migration of NAPLs (i.e., no increased NAPL extent); and

(v) the NAPLs will not result in the critical groundwater PCLs being exceeded at the downgradient boundary of the plume management zone or in the critical PCLs for other environmental media being exceeded at the applicable POE.

To address the NAPL in the TI Zones for the A-TZ, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be achieved through control via TI based on the occurrence of DNAPL in wells completed in the A-TZ. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells (i.e., MW-57A and MW-78A), the TI demonstration details the difficulty of achieving groundwater PCLs in these

areas because of complex hydrogeology and physical nature of creosote (discussed in Worksheet 2.3). The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based "no growth" PMZs can be met, including no cPCL exceedances at the alternate POE wells.

Therefore, since the wells with DNAPL lie within the proposed TI Zones (On-site and Off-Site), the current response objective per the TCEQ Guidance is to ensure compliance of NAPL in the TI Zone through control. Readily recoverable NAPL will be recovered from wells on a monthly basis in order to control potential migration from the TI Zone. In addition, institutional controls on groundwater use will be implemented to protect exposure to residual NAPL in the GWBUs.

DNAPL recovered as part of the corrective action will be stored on-site in DOT approved drums within the CSA (Unit 4), and then disposed of in accordance with all applicable laws and regulations within the applicable timeframes.

If this is a Class 2 groundwater, explain how the response action will ensure that leachate from the surface soil and subsurface soil PCLE zones will not increase concentration of COCs greater than the current measured concentrations (at time of RAP submittal). (§350.33(a)(2))

Groundwater monitoring has been on-going at the Site since 1997. Current and historical groundwater data from the A-TZ source areas (SWMU 4, 5, 8) (Attachment 1B), especially wells with data going back to 1997, suggest that the COC concentrations in the A-TZ groundwater plume were historically higher compared to present day data. Overall the primary COC concentrations are stable or decreasing. The few wells with increasing concentrations either contain DNAPL or had DNAPL noted in the GWBU on the soil boring log. Therefore, the COCs in the vadose zone (surface and subsurface soil) have reached a point where the mass loading to the A-TZ has reached a state of equilibrium and continued leachate migration to groundwater from surface or subsurface soil will not cause expansion of the groundwater PCLE Zone for the A-TZ. In addition, with the proposed PMZ for the Site, groundwater monitoring as part of the PMZ will be used to confirm that any potential leachate in the surface and subsurface soils will not cause an increase in COC concentrations in groundwater at the POE in excess of the groundwater PCL.

As part of the response action for the surface and subsurface soils in the former HWPW area, the proposed response will be to construct a capped area over the surface soil PCLE Zone. Even though the cap is not designed for hydraulic control, the cap will be constructed with compacted clay and vegetation and sloped to drain storm water. The design of the cap (sloped and vegetated) will minimize infiltration across the surface soil PCLE Zone and reduce leachate migration from the vadose zone to the A-TZ.

Provide the basis that the COCs will not migrate beyond the downgradient boundary of the PMZ at concentrations above the critical PCL. Include supporting documentation in Attachment 2E.

Since the Site was first developed for creosoting operations in 1899, various releases over time likely occurred until the Site operations ceased in 1984. The facility was dismantled in the early 1990s. There have been no other operations at the former HWPW Site in over 30 years. Given the long period of time since releases have occurred at the Site, impacts to surface soils that have migrated to the A-TZ

groundwater have likely reached a state of equilibrium, as discussed above. This is supported with the A-TZ groundwater analytical data that indicate the distribution of COCs dissolved in Site groundwater is relatively stable in the source areas. The concentration vs time graphs presented in Attachment 1B-1 through 1B-15 indicate that most of the groundwater COC concentrations are remaining relatively stable. This is confirmed for most of the wells with the Mann-Kendall statistical analysis included in Attachment 2E, except for the following wells:

- For wells MW-12A and MW-18A in the source areas, the Mann-Kendall trend analysis for 2-methylnaphthalene (MW-18A) and dibenzofuran (MW-12A and MW-18A) show increasing trends from 2010 to 2014. However, for both MW-12A and MW-18A, both 2-methylnaphthalene (Attachment 1B-3) and dibenzofuran (Attachment 1B-4) concentrations were greater in 2001 to 2002 compared to recent concentrations.
- An increasing trend for naphthalene in MW-15A was noted, but similar to MW-12A and MW-18A, the highest concentrations in this well were detected in 2001 to 2003 sampling events. None of the COCs were detected above cPCLs during the most recent sampling event.
- Increasing trends for 2-methylnaphthalene, dibenzofuran, and naphthalene were calculated for off-site well MW-33A (with probably increasing trends for benzene and 2,4-dimehtylphenol); however, the most recent groundwater data indicate COC concentrations less than cPCLs.
- Increasing trends for benzene and 2-methylnaphthalene were calculated for off-site well MW-44A; however, the most recent groundwater data indicate COC concentrations less than cPCLs.

Therefore, the increasing trends calculated may be due to fluctuations over time rather than indicative of additional release causing the apparent increase. As shown on Attachment 1A, Figure 5B-20, the groundwater PCLE Zone for the A-TZ has remained stable over the past four years.

The downgradient boundary of the on-site and off-site A-TZ PMZ is located at monitoring wells MW-25A, MW-26A, MW-36A, MW-59A, MW-60A, MW-61A, and MW-69A (alternate points of exposure) (Attachment 2D-1). As previously discussed, there appears to be a groundwater divide near MW-44A on the north end and MW-49A/MW-59A on the south end just east of MW-18A (Attachment 1A, Figure 5A-1), which lines up with the 60-inch sanitary sewer line that runs north-south. Wells MW-25A, MW-59A, MW-60A, and MW-61A appear to be east of the groundwater divide. This is supported with by the low concentrations of COCs in these wells (Attachment 1A, Figure 5B-1). Fluid samples collected from the sanitary sewer line in 2010 did not indicate a significant loading of COC concentrations into the sewer line; however, the sewer line appears to serve as the downgradient groundwater control for the PMZ. Therefore, it is not anticipated that the on-site and off-site A-TZ groundwater PCLE zone will migrate beyond the proposed A-TZ PMZ boundary.

Attenuation Action Levels (AALs) have been established for Attenuation Monitoring Points (AMPs) within the centerline of the A-TZ plume in order to ensure groundwater COC concentrations do not exceed the cPCLs at the alternate point of exposure (POE) wells. Details on AAL development are provided in Attachment 2E. However, given the complex hydrogeology in the A-TZ, the primary monitoring points for the on-site and off-site PMZs will be at the proposed alternate POE wells. The proposed POE wells are shown on Attachment 2D-1. In addition, monitoring well MW-18A, which is listed as an AMP for the A-TZ, will be plugged and abandoned as part of the soil cap construction. The replacement well MW-18AR will be installed east of the current location outside of the proposed soil cap area. The proposed location is also shown on Attachment 2D-1.

Details of the monitoring plan for the A-TZ PMZ are provided in Worksheet 3.1 and Appendix 6.

Describe the methods used to determine that there are no artificial penetrations which can allow COCs to migrate from the groundwater PCLE zone to currently unaffected groundwater-bearing units. Include supporting documentation in Attachment 2E.

An on-site field survey and water-well data search was conducted, indicating no potential vertical artificial penetrations that would act as a conduit for migration of shallow groundwater into the underlying groundwater formation. However, as discussed in the APAR Addendum (PBW, 2009), two sets of fiber optic lines, Level 3 Communications and Qwest, run along the north side of the rail main lines across the entire length of the Site (Attachment 1A, Figure 5A-1). Based on conversations with both Level 3 Communications and Qwest representatives, the fiber lines run underneath SWMUs 2, 5, 4, 8, and 10/11. The fiber lines run directly underneath the drainage ditch southwest of the Site and under the SDD about 3 to 5 feet bgs. The Level 3 Communications line reportedly was directionally bored to a depth of 40 to 45 feet bgs underneath the Original and Recent Process Areas (SWMU Nos. 5 and 4, respectively) and under the AST Area (SWMU No. 8). The Qwest fiber line reportedly runs 10 to 15 feet northwest and parallel of the main rail line, and is about 5 to 10 feet bgs through the Site. Just east of SWMU No. 8, both fiber lines return to approximately 4 to 6 feet below grade an continue running northeast parallel to the rail main line. The Level 3 Communications line may act as an artificial penetration since the reported depths of the line go through both the A-TZ and into the B-CZ immediately below the primary source areas. Given the depth of the fiber optic line is below the A-TZ and likely below the B-TZ (or carbonate seams within the B-CZ), monitoring well MW-19C will continue to be monitored to evaluate if the directional bored fiber optic lines are creating a preferential pathway for COCs to migrate to the C-TZ GWBU.

In addition to the fiber lines, three City of Houston utilities were identified in the previous APAR (PBW, 2009) that cut across the Site oriented north-south just west of the Lockwood Street Bridge: 1) 60-in wastewater line, 2) 84-in water line, and 3) a 42-in storm sewer line (PBW, 2009). Through a review of the utility drawing files obtained from the City of Houston Public Works Survey Department, two of the underground utility lines (the 60-in sanitary sewer line and the 84-in water line) appear to be at depths that potentially intersect the uppermost GWBU A-TZ. The estimated depths of the utilities based on the city drawings are shown on the Geologic Cross Sections A-A', B-B', and C-C' (Attachment 1A, Figure 4C-1). The estimated base depth of the 60-in wastewater line and the 84-in water line where Cross Section B-B' crosses the utility lines is approximately 23 feet bgs (approximate elevation of 26 feet HVD). It is highly unlikely that A-TZ groundwater is seeping into the 84-in water line, given the line is under pressure (flow is south to north), constructed with welded steel pipe, and is relatively new (constructed in 2000). Sampling of the 60-in sanitary sewer line was conducted in 2010, as previously discussed.

List the attenuation action level determined for each attenuation monitoring point. Illustrate the proposed attenuation monitoring points and the groundwater PCLE zone on the map in Attachment 2D. Include all calculations and other methods of determining the attenuation action levels in Attachment 2E.

COC	Attenuation Monitoring Point (well number)	Attenuation Action Level (mg/L)	Attenuation Action Level limited by $^{Air}GW_{Inh\text{-}V}$ or existing COC concentration? Y/N
Benzene	MW-18A*	1.5	N
	MW-44A	0.0132	N
	MW-25A	0.005 (cPCL)	N
2,4-Dimethylphenol	MW-18A*	24	NA
	MW-44A	1.251	NA
	MW-25A	0.49 (cPCL)	NA
2 Methylnaphthalene	MW-18A*	1.5	NA
	MW-44A	0.189	NA
	MW-25A	0.098 (cPCL)	NA
Dibenzofuran	MW-18A*	0.52	NA
	MW-44A	0.147	NA
	MW-25A	0.098 (cPCL)	NA
Naphthalene	MW-18A*	26.16	N
	MW-44A	1.424	N
	MW-25A	0.49 (cPCL)	N

Note: * - Monitoring Well MW-18A is within the proposed soil cap area and will be plugged and abandoned. A replacement well (MW-18AR) is proposed to be installed outside of the capped well to the east of MW-18A (see Attachment 2D-1).

Attenuation Action Levels were not developed for other COCs since the primary COCs listed above define the PCLE Zone.

Groundwater-bearing unit **B-CZ/B-TZ**

Repeat this worksheet for each groundwater-bearing unit for which a PMZ is proposed.

Groundwater classification **X** 2 ____ 3

Provide justification as to why the PMZ is appropriate in accordance with §350.33(f)(4)(A). Include supporting documentation in Attachment 2E.

The two On-site PMZs (On-Site PMZ (Main) and On-Site PMZ (West)) and Off-Site PMZs proposed (Attachment 2D-2) as a response action for the B-CZ/B-TZ PCLE zone ensures that COCs will not pose a potential unacceptable risk to human health or the environment as long as the AALs are not exceeded at the respective AMPs and exceedances of cPCLs at the proposed alternate POE wells. Both the on-site and off-site PMZs are appropriate for this PCLE zone based on a low groundwater velocity (hydraulic conductivities are indicative of saturated soils in the B-CZ (see Attachment 1A)), overall stable/declining COC concentrations, the proposed institutional controls (deed recordation and restrictive covenants) on use of groundwater within the PCLE Zone, and the absence of any existing water supply wells within ½-mile of the Site. In addition, there are no surface water bodies at the Site or near the proposed PMZs; therefore, there is no potential for contaminating surface waters that would be hydraulically connected to groundwater. The City of Houston provides municipal water services for all properties within the Affected Property, so there is no complete human health pathway associated with this GWBU. The Site is also within the jurisdiction of the HGSD, which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

The PMZs proposed for the B-CZ/B-TZ PCLE zones consists of two components: 1) filing of institutional controls including deed recordation (UPRR-Owned properties – on-site PMZ)) and restrictive covenants (off-site properties – off-site PMZ)) prohibiting the use of groundwater within the PMZs; and 2) performance of ongoing groundwater monitoring. The proposed deed recordation and restrictive covenant language, to be filed in the Harris County deed records, is included in Appendix 4.

As detailed in Attachment 1A, the B-CZ/B-TZ on-site and off-site PMZs were established using the July/August 2014 groundwater analytical data collected from the Site, in conjunction with trend analysis for groundwater analytical data from 2010 through 2014 (10 semi-annual sampling events, Attachment 2E) and development of attenuation action levels from groundwater data collected from 2006 through 2014. Comparing the maximum groundwater analytical data from the July/August 2014 groundwater sampling event to cPCLs, concentrations of 23 target COCs exceeded their respective cPCLs in at least one of the four GWBUs. For the B-CZ/B-TZ, the following 14 COCs were detected above cPCLs (using Class 2 groundwater PCLs for both the B-TZ and B-CZ (see Attachment 1A for discussion on B-CZ as a saturated soil):

VOCs

- Benzene
- Ethylbenzene (B-CZ only)
- Methylene Chloride
- Toluene (B-CZ only)
- Vinyl Chloride

SVOCs

- 2,4-Dimethylphenol
- 2,6-Dinitrotoluene
- 2-Methylnaphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Bis(2-chloroethoxy)methane
- Dibenzofuran

- Naphthalene
- Phenol

Similar to the A-TZ PCLE Zone, benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene are the most prominent COCs where the cPCL exceedances for these COCs define the PCLE Zone in the B-CZ/B-TZ. Therefore, the trend analyses were conducted for these five COCs (Attachment 2E).

Since there are two distinct groundwater PCLE Zones further than 500 feet apart within the B-CZ and B-TZ, two separate on-site PMZs were established (Attachment 2D-2):

1. On-Site PMZ (Main)
2. On-Site PMZ (West)

As discussed in Worksheet 2.3, a TI Zone will also be established for areas where DNAPL has been detected in monitoring wells or observed in the soil boring log for the GWBUs on site and off site. Details of the TI Zone are provided in Attachment 2G.

In accordance with §350.33(f)(4)(A), the on-site and off-site PMZs for the B-CZ and B-TZ Unit will be actively monitored (semi-annually). MNA will be used as a control response for this unit.

Is the alternate POE proposed to be beyond the current limits of the PCLE zone? X Yes ___ No
If yes, how far? Approximately 150 feet downgradient (§350.37(l) or (m) as applicable)
Is it to be off-site? **X** Yes ____ No
On an off-site property that currently does not contain a residential-based groundwater PCLE zone?
X Yes ___ No

If yes and this is a Class 2 groundwater, provide the basis for concluding that this groundwater does not have a reasonably anticipated future beneficial use (§350.37(l)(3)).

The residential-based PCLE zone extends onto the off-site properties (to the north and to the east in the residential area), and on to the City of Houston ROW. The proposed PMZs extend to the closest monitoring wells where COC concentrations in groundwater are less than the cPCL based on the groundwater data collected in July/August 2014. As previously discussed, the City of Houston provides municipal water services for all properties within the Affected Property, so there is no current beneficial use for the GWBU. The Site is also within the jurisdiction of the HGSD, which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions for small domestic wells, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

Therefore, with the City of Houston providing water for the area, and financial disincentives placed on shallow groundwater use by the HGSD (which the Texas Supreme Court ruled in favor of the HGSD in 1977 to protect public welfare by limiting harmful pumping, which was causing ground subsidence of the land resulting in flooding (*Beckendorff v. Harris-Galveston Coastal Subsidence District (1977)*), the shallow groundwater does not have a reasonably anticipated future beneficial use in the area.

Is NAPL present? _X_ Yes _____ No

If so, describe how the response action will achieve the performance criteria in §350.33(f)(4)(E).

To address the NAPL in the TI Zone for the B-CZ/B-TZ, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be achieved through control via TI based on the occurrence of DNAPL in wells completed in the B-CZ/B-TZ. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells (i.e., MW-12B, MW-32B, MW-41B, MW-70B, MW-75B and MW-78A, and observed DNAPL in soil borings (Attachment 1A, Figure 5A-6)), the TI demonstration details the difficulty of achieving groundwater PCLs in these areas because of complex hydrogeology (B-CZ consists of thin carbonate seams with average hydraulic conductivity of approximately 2×10^{-7} cm/sec (Attachment 1A)) and physical nature of creosote (discussed in Worksheet 2.3). The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the overall TI-based "no-growth" PMZ (includes on-site and off-site PMZs) can be met, including no cPCL exceedances at the alternate POE wells.

Therefore, since the wells with DNAPL present lie within the proposed TI Zones (On-site and Off-Site), the current response objective per the TCEQ Guidance is to ensure compliance of NAPL zone in the TI Zone through control. Readily recoverable NAPL will be recovered from wells on a monthly basis in order to control potential migration from the TI Zone. In addition, institutional controls on groundwater use will be implemented to protect exposure to residual NAPL in the GWBUs.

DNAPL recovered as part of the corrective action will be stored on-site in DOT approved drums within the CSA (Unit 4), and then disposed of in accordance with all applicable laws and regulations within the applicable timeframes.

If this is a Class 2 groundwater, explain how the response action will ensure that leachate from the surface soil and subsurface soil PCLE zones will not increase concentration of COCs greater than the current measured concentrations (at time of RAP submittal). (§350.33(a)(2))

With the B-CZ/B-TZ underlying the A-TZ, see response to this question for the A-TZ unit.

Provide the basis that the COCs will not migrate beyond the downgradient boundary of the PMZ at concentrations above the critical PCL. Include supporting documentation in Attachment 2E.

As discussed for the A-TZ PMZs, wood treating operations began at the Site over 115 years ago and continued until about 30 years ago. Given the long period of time since releases have occurred at the Site, creosote DNAPL and related COCs has migrated from the vadose zone (surface and subsurface soils) to the A-TZ groundwater, then to the B-CZ/B-TZ. There are two main areas within the B-CZ/B-TZ where the DNAPL has migrated and resulted in a PCLE Zone:

1. On-Site PMZ (Main)/Off-Site PMZs - Centered in the northeast part of the Site near SWMUs 4, 5, and 8, onto the eastern portion of the Englewood Intermodal Yard, and extending off-site (Off-Site PMZs) to the north of the Site; and
2. On-Site (West) - On the west side of the Site near MW-12B and MW-41B.

<u>On-Site PMZ (Main)/Off-Site PMZs (including City of Houston ROW):</u>

For the area centered over the northeast portion of the Site, predominately off-site, DNAPL has been either observed in the monitoring well soil borings (i.e., MW-35B, MW-63B, MW-68B, and others) or has been detected in the wells (i.e., MW-32B, MW-70B, MW-75B) that fall within the B-CZ/B-TZ groundwater PCLE Zone (Attachment 1A, Figure 5A-6). The fact that the PCLE Zone in the B-CZ is closely tied to where NAPL was observed suggests that there is both not a high rate of dissolved constituent migration beyond the DNAPL areas either on-site or off-site. Also groundwater velocities through the B-CZ are very low given the low hydraulic conductivity of the carbonate gravel seams within the clay unit. Proposed POE wells MW-15B, MW-36B, MW-59B, MW-67B, MW-80B and MW-81B show either no detections of the COCs or relatively stable COC concentrations well below the RALs (Attachment 1B-11 through 1B-15). This is supported with the B-CZ/B-TZ groundwater analytical data that indicate the distribution of COCs dissolved in Site groundwater is relatively stable in the source areas.

For wells with concentrations near or above cPCLs, the concentration vs time graphs presented in Attachment 1B indicate that groundwater concentrations are remaining relatively stable, which is confirmed with the Mann-Kendall statistical analysis (Attachment 2E), except for MW-49B, MW-70B and MW-74B. Mann-Kendall trend analyses of the groundwater data from MW-49B indicate increasing trends for 2,4-dimethylphenol, 2-methylnaphthalene, and naphthalene; and probably increasing trends for benzene and dibenzofuran using data from 2010 through 2014. Benzene concentrations in well MW-70B indicate a Mann-Kendall increasing trend; however, DNAPL is present in the well. An increasing trend was noted for 2-methylnaphthalene in MW-74B. There have been only five sampling events from MW-74B; therefore, the trends may be indicative of seasonal variation rather than a true increase that will be confirmed with additional sampling. Both MW-70B and MW-74B are located within the central portion of the plume. As shown on Attachment 1A-Figure 5B-21, the overall groundwater PCLE Zone for the B-CZ/B-TZ has remained stable over the past four years.

In addition, migration of either DNAPL or dissolved-phase COCs in the B-CZ is not likely to extend beyond the current impacted areas based on the very low hydraulic conductivity of the wells north of the Site (consistently less than 1×10^{-5} cm/sec as discussed in Attachment 1A).

<u>On-Site PMZ (West)</u>:
On the west side of the Site, the B-TZ groundwater PCLE zone appears to be confined to three wells: MW-12B, MW-40B, and MW-41B. Historically, wells MW-12B and MW-41B have had DNAPL in-well thicknesses as thick as 15 feet (MW-12B) and 22.8 feet (MW-41B). Both wells are part of the on-going DNAPL recovery activities. In 2009, monitoring well (test well) TW-41B was installed about 40 feet north of MW-41B between MW-41B and MW-12B to serve as a possible DNAPL recovery well. The well was constructed to the same general elevations and screened intervals as MW-41B (Attachment 1A, Figure 4C-3). However, no DNAPL has been detected in TW-41B, and groundwater samples from the well have been less than RALs.

The boundary of the B-TZ PMZ on the west side is located at monitoring wells MW-38B, MW-39B, MW-42B, MW-62B, P-12, and P-11 (alternate POE wells) (Attachment 2D-2). Groundwater analytical data from these west perimeter wells indicate COC concentrations less than cPCLs, and most show either no trend or decreasing trends (Attachment 1B-16 through 1B-20). Monitoring well MW-38B is located approximately 50 feet west of MW-12B. The viscosity of the DNAPL from MW-12B was tested in 2007 with a reading of 192 centipoises, indicating a relatively viscous liquid. With groundwater data less than cPCLs in the wells in close proximity of the wells with DNAPL, this supports the limited dissolved COC migration in the area. Therefore, it is not anticipated that the B-TZ groundwater PCLE zone will migrate beyond the proposed B-CZ/B-TZ PMZ boundary.

For the B-CZ groundwater PCLE Zone on the northeast side of the Site, AALs were established for sampling points leading from MW-70B (off-site, and contains DNAPL) to MW-67B (Attachment 2E-6 through 2E-10 for benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene, respectively) in order to ensure groundwater COC concentrations do not exceed the cPCLs at the point of exposure (MW-67B). Details on AAL development are provided in Attachment 2E. POE wells for the north and east sides of the B-CZ PMZ are shown on Attachment 2D-2. Two additional B-TZ/B-CZ wells (PMW-83B and PMW-84B ("P" indicates proposed and will be removed from the well identification once installed)) are proposed to be installed to serve as alternate POE wells and monitor the PMZ to the north of the Site (Attachment 2D-2). An additional corrective action observation well (PMW-82B) will be installed to the west of MW-35B. Details of the well installation are provided in Attachment 2B.

Describe the methods used to determine that there are no artificial penetrations which can allow COCs to migrate from the groundwater PCLE zone to currently unaffected groundwater-bearing units. Include supporting documentation in Attachment 2E.

The site-related contaminants and DNAPL have been detected in the B-CZ/B-TZ, and underlying C-TZ. PMZs are also proposed for the other GWBUs at the Site. Groundwater wells were installed in the underlying D-TZ, and until the July/August 2014 groundwater sampling event, Site-related COC concentrations have been below RALs in those wells.

An on-site field survey and water-well data search was conducted, indicating no potential artificial vertical penetrations that would act as a conduit for migration of shallow groundwater into the underlying groundwater formation. A discussion on underground utilities for A-TZ and possible communication with the B-CZ and deeper C-TZ is provided under the A-TZ summary (see RAP Worksheet 2.1, Page 13).

List the attenuation action level determined for each attenuation monitoring point. Illustrate the proposed attenuation monitoring points and the groundwater PCLE zone on the map in Attachment 2D. Include all calculations and other methods of determining the attenuation action levels in Attachment 2E.

COC	Attenuation Monitoring Point (well number)	Attenuation Action Level (mg/L)	Attenuation Action Level limited by $^{Air}GW_{Inh\text{-}V}$ or existing COC concentration? Y/N
Benzene	MW-70B	38.45	Y -23 mg/L (Res, 30-ac Source)
	MW-33BR	3.259	N
	MW-63B	0.210	N
	MW-67B	0.005 (cPCL)	N
2,4-Dimethylphenol	MW-70B	72	NA
	MW-33BR	18.18	NA
	MW-63B	3.94	NA
	MW-67B	0.49 (cPCL)	NA
2 Methylnaphthalene	MW-70B	2.399	NA
	MW-33BR	0.993	NA
	MW-63B	0.3727	NA
	MW-67B	0.098 (cPCL)	NA
Dibenzofuran	MW-70B	0.6483	NA
	MW-33BR	0.3850	NA
	MW-63B	0.2158	NA
	MW-67B	0.098 (cPCL)	NA
Naphthalene	MW-70B	87.86	Y – 41 mg/L (>S) (Res, 30-ac Source)
	MW-33BR	21	N
	MW-63B	4.281	N
	MW-67B	0.49 (cPCL)	N

Note: Attenuation Action Levels were not developed for other COCs since the primary COCs listed above define the PCLE Zone.

The proposed PMZ and AMPs for the B-CZ/B-TZ are shown on Attachment 2D-2.

Groundwater-bearing unit **C-TZ**

Repeat this worksheet for each groundwater-bearing unit for which a PMZ is proposed.

Groundwater classification X 2 ____ 3

Provide justification as to why the PMZ is appropriate in accordance with §350.33(f)(4)(A). Include supporting documentation in Attachment 2E.

The on-site and off-site PMZs proposed (Attachment 2D-3) as a response action for the C-TZ PCLE zone ensures that COCs will not pose a potential unacceptable risk to human health or the environment as long as the AALs are not exceeded at the respective AMPs or exceeds the cPCL at the alternate POE wells. The PMZs are appropriate for this PCLE zone based on a low groundwater velocity, stable/declining COC concentrations, the proposed institutional controls (deed recordation and restrictive covenants) on use of groundwater within the PCLE Zone, and the absence of any existing water supply wells within ½-mile of the Site. In addition, there are no surface water bodies at the Site or near the proposed PMZs; therefore, there is no potential for contaminating surface waters that would be hydraulically connected to groundwater. The City of Houston provides municipal water services for all properties within the Affected Property, so there is no complete human health pathway associated with this GWBU. The Site is also within the jurisdiction of the HGSD, which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

The PMZs proposed for the C-TZ PCLE zones consists of two components: 1) filing of institutional controls including deed recordation (UPRR-Owned properties – on-site PMZ)) and restrictive covenants (off-site properties – Off-Site PMZ and Off-Site PMZ City of Houston ROW)) prohibiting the use of groundwater within the PMZs; and 2) performance of ongoing groundwater monitoring at the AMP and POE wells. The proposed deed recordation and restrictive covenant language, to be filed in the Harris County deed records, is included in Appendix 4.

The on-site and off-site PMZs for C-TZ were established using the July/August 2014 groundwater analytical data collected from the Site (Attachment 1A), in conjunction with trend analysis for groundwater analytical data from 2010 through 2014 (10 semi-annual sampling events) and development of attenuation action levels from groundwater data collected from 1997 through 2014. Comparing the maximum groundwater analytical data from the July/August 2014 groundwater sampling event to cPCLs, concentrations of 23 target COCs exceeded their respective cPCLs in at least one of the four GWBUs. For the C-TZ, the following 19 COCs were detected above cPCLs:

VOCs

- Benzene
- Methylene Chloride

SVOCs

- 2,4-Dimethylphenol
- 2,6-Dinitrotoluene
- 2-Methylnaphthalene
- Acenaphthene (one well*)
- Anthracene (one well*)
- Benzo(a)anthracene
- Benzo(a)pyrene
- Bis(2-chloroethoxy)methane (one well*)
- Chrysene (one well*)

SVOCs (cont)

- Dibenzofuran
- Fluoranthene (one well*)
- Fluorene (one well*)
- Naphthalene
- Pentachlorophenol
- Phenanthrene (one well*)
- Phenol
- Pyrene (one well*)

* - COC only detected in wells with DNAPL present

Similar to the A-TZ PCLE Zone, benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene are the most prominent COCs where the cPCL exceedances for these COCs define the PCLE Zone in the C-TZ. Therefore, the trend analyses were conducted for these five COCs (Attachment 2E).

As discussed in Worksheet 2.3, a TI Zone will also be established for areas where DNAPL has been detected in monitoring wells or observed in the soil boring log for the GWBU (Attachment 2G).

In accordance with §350.33(f)(4)(A), the PMZ for the C-TZ Unit will be actively monitored (semi-annually). MNA will be used as a control response for this unit.

Is the alternate POE proposed to be beyond the current limits of the PCLE zone? X Yes ___ No
If yes, how far? Approximately 100 feet (§350.37(l) or (m) as applicable)
Is it to be off-site? X Yes ___ No
On an off-site property that currently does not contain a residential-based groundwater PCLE zone?
X Yes ___ No - The residential-based PCLE zone extends onto the off-site property (to the north and to the east).

If yes and this is a Class 2 groundwater, provide the basis for concluding that this groundwater does not have a reasonably anticipated future beneficial use (§350.37(l)(3)).

The residential-based PCLE zone extends onto the off-site properties (to the north and to the east in the residential area), and on to the City of Houston ROW. The proposed PMZs extend to the closest monitoring wells where COC concentrations in groundwater are less than the cPCL based on the groundwater data collected in July/August 2014. As previously discussed, the City of Houston provides municipal water services for all properties within the Affected Property, so there is no current beneficial use for the GWBU. The Site is also within the jurisdiction of the HGSD, which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions for small domestic wells, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are "intended to operate as an economic disincentive to groundwater withdrawal" (HGSD, 2013).

Therefore, with the City of Houston providing water for the area, and financial disincentives placed on shallow groundwater use by the HGSD (which the Texas Supreme Court ruled in favor of the HGSD in 1977 to protect public welfare by limiting harmful pumping, which was causing ground subsidence of the land resulting in flooding (*Beckendorff v. Harris-Galveston Coastal Subsidence District (1977)*), the shallow groundwater does not have a reasonably anticipated future beneficial use in the area.

Is NAPL present? **X** Yes _____ No

If so, describe how the response action will achieve the performance criteria in §350.33(f)(4)(E).

To address the NAPL in the TI Zone for the C-TZ, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be achieved through control via TI based on the occurrence of DNAPL in wells completed in the C-TZ. For areas where either creosote NAPL was noted in the soil boring log in the saturated zone or is detected in monitoring wells (i.e., MW-17C, MW-18C, MW-23C, MW-25C, MW-34CR, MW-44C, MW-45C, MW-46C, MW-47C, MW-48C, and MW-68C, and observed DNAPL in soil borings (Attachment 1A, Figure 5A-7)), the TI demonstration details the difficulty of achieving groundwater PCLs in these areas because of complex hydrogeology (Attachment 1A) and physical nature of creosote (discussed in Worksheet 2.3). The control endpoint will be to control the soluble NAPL fraction sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the overall TI-based "no-growth" PMZ (includes on-site and off-site PMZs) can be met, including no cPCL exceedances at the alternate POE wells.

Therefore, since the wells with DNAPL present lie within the proposed TI Zones (On-site and Off-Site), the current response objective per the TCEQ Guidance is to ensure compliance of NAPL zone in the TI Zone through control. Readily recoverable NAPL will be recovered from wells on a monthly basis in order to control potential migration from the TI Zone. In addition, institutional controls on groundwater use will be implemented to protect exposure to residual NAPL in the GWBUs.

DNAPL recovered as part of the corrective action will be stored on-site in DOT approved drums within the CSA (Unit 4), and then disposed of in accordance with all applicable laws and regulations within the applicable timeframes.

If this is a Class 2 groundwater, explain how the response action will ensure that leachate from the surface soil and subsurface soil PCLE zones will not increase concentration of COCs greater than the current measured concentrations (at time of RAP submittal). (§350.33(a)(2))

With the C-TZ underlying the A-TZ and the B-CZ/B-TZ, please see response to this question for the A-TZ unit (RAP Worksheet 2.1, page 11).

Provide the basis that the COCs will not migrate beyond the downgradient boundary of the PMZ at concentrations above the critical PCL. Include supporting documentation in Attachment 2E.

Wood treating operations began at the Site over 115 years ago and continued until about 30 years ago. Given the long period of time since releases have occurred at the Site, creosote DNAPL and related COCs has migrated from the vadose zone (surface and subsurface soils) to the A-TZ groundwater, to the B-CZ/B-TZ, and to the C-TZ. The PCLE Zone for the C-TZ groundwater appears to correlate well with where DNAPL was observed in the C-TZ sand in the soil borings or where DNAPL has been detected in the monitoring wells. The center of the groundwater PCLE Zone appears to be in the vicinity of MW-23C (near SWMU 4 and 6), and extends off-site to the northeast near the Lockwood Street Bridge

overpass (DNAPL present in wells MW-25C, MW-44C, MW-45C, and MW-46C). Unlike the A-TZ and B-CZ/B-TZ units, groundwater flow in the C-TZ is generally to the southwest across the area.

For the off-site area northeast of the Site, DNAPL has been detected in the wells (i.e., MW-25C, MW-44C, MW-45C, and MW-46C) that fall within the C-TZ groundwater PCLE Zone (Attachment 1A, Figure 5A-7). Similar to the B-CZ/B-TZ, the PCLE Zone in the C-TZ is closely tied to where NAPL was observed. This suggests that there is not a high rate of dissolved constituent migration beyond the DNAPL areas. This is supported with the C-TZ groundwater analytical data that indicate the distribution of COCs dissolved in Site groundwater is relatively stable in the source areas, with the exception of MW-18C. The Mann-Kendall trend analysis for MW-18C groundwater data from 2010 through 2014 indicate increasing trends of 2-methylnaphthalene, dibenzofuran, and naphthalene. Well MW-18C is upgradient of MW-23C, which has higher concentrations of these COCs relative to MW-18C and also has DNAPL present in the well. MW-19C dibenzofuran concentrations from 2010 to 2014 indicate a Mann-Kendall probably increasing trend; however, concentrations in MW-19C (0.000554 mg/L) are well below the cPCL (0.29 mg/L (on-site)).

Along the edges of the PCLE Zone, concentration vs time graphs presented in Attachment 1B (1B-31 through 1B-40) indicate that groundwater concentrations are remaining relatively stable, which is confirmed with the Mann-Kendall statistical analysis included in Attachment 2E, except for MW-68C. As shown on Attachment 1A-Figure 5B-22, the groundwater PCLE Zone for the C-TZ has remained relatively stable over the past four years, with slight changes along the northeast and cross gradient side during the July 2012 and July/August 2014 events because of benzene cPCL exceedances in MW-68C. Benzene and naphthalene concentrations have been sporadic in MW-68C, where benzene concentrations exceeded the cPCL in January and July 2012, decreased below the cPCL in January 2013, then exceeded the cPCL in July/August 2014, and then decreased below the cPCL during the resampling event in September 2014 (discussed in Attachment 1A). For the purposes of this RAP, the PMZ will include MW-68C to account for the occasional benzene PCLE at that well. Newly installed well MW-76C (installed in May 2014) had a detection of pentachlorophenol (0.00272 mg/L) above the cPCL (0.002 mg/L) during the July/August 2014 sampling event. The well was resampled in September 2014, and pentachlorophenol concentrations were not detected (SDL<cPCL), but benzo(a)pyrene concentrations were detected at 0.000278 mg/L, just above the cPCL of 0.0002 mg/L. Benzo(a)pyrene concentrations were less than the cPCL during the initial sampling event. However, based on conversations with the TCEQ regarding the PMZ for the C-TZ, the On-Site PMZ (Main) in the C-TZ will not include this well, but rather will be extended to a proposed well (PMW-85C) upgradient of MW-76C. MW-76C will be included as a Corrective Action Observation Well, along with another C-TZ monitoring well downgradient of MW-76C (Attachment 2D-3).

Proposed point of exposure wells MW-15C, MW-28C, MW-47C, MW-48C, and MW-54C show either predominantly no detections of the COCs or relatively stable COC concentrations well below the RALs (Attachment 1B-26 through 1B-30). Mann-Kendall trend analysis shows an increasing concentration for dibenzofuran from 2010 to 2014 in MW-54C (Attachment 2E); however, concentrations have been decreasing since July 2013 (Attachment 1B-39). With groundwater data less than cPCLs in the wells (MW-19C and MW-54C) in close proximity of the wells with DNAPL, this supports the limited dissolved COC migration in the area. Therefore, it is not anticipated that the C-TZ groundwater PCLE zone will migrate beyond the proposed C-TZ on-site and off-site PMZ boundary.

For the C-TZ groundwater PCLE Zone, AALs were established for sampling points leading from MW-23C (contains DNAPL) to MW-76C (Attachment 2D-3) in order to ensure groundwater COC concentrations do not exceed the cPCLs at the POE (at the proposed well PMW-85C). Once PMW-85C

is installed, the well will be evaluated as the downgradient alternate POE well for the C-TZ. Details on AAL development are provided in Attachment 2E. POE wells for the C-TZ PMZ are also shown on Attachment 2D-3. With the low detections of benzene in MW-68C, one additional C-TZ well (PMW-83C) is proposed to be installed to serve as a POE well and monitor the PMZ cross gradient to the north of the Site and MW-68C (Attachment 2D-3). Details of the well installation are provided in Attachment 2B.

Describe the methods used to determine that there are no artificial penetrations which can allow COCs to migrate from the groundwater PCLE zone to currently unaffected groundwater-bearing units. Include supporting documentation in Attachment 2E.

An on-site field survey and water-well data search was conducted, indicating no potential artificial penetrations that would act as a conduit for migration of shallow groundwater into the underlying groundwater formation.

A discussion on underground utilities for A-TZ and possible communication with the C-TZ was provided under the A-TZ summary. Given the depths of the fiber optic line (reportedly as deep as 45 feet bgs) to just above the C-TZ unit, monitoring well MW-19C will continue to be monitored as a Corrective Action Observation Well to evaluate if the directional bored fiber optic lines are creating a preferential pathway for COCs to migrate to the deep GWBUs.

List the attenuation action level determined for each attenuation monitoring point. Illustrate the proposed attenuation monitoring points and the groundwater PCLE zone on the map in Attachment 2D. Include all calculations and other methods of determining the attenuation action levels in Attachment 2E.

COC	Attenuation Monitoring Point (well number)	Attenuation Action Level (mg/L)	Attenuation Action Level limited by $^{Air}GW_{Inh-V}$ or existing COC concentration? Y/N
Benzene	MW-23C*	0.131	N
	MW-17	0.093	N
	MW-76C**	0.007	N
	PMW-85C**	0.005	N
2,4-Dimethylphenol	MW-23C*	9.74	N
	MW-17	7.09	N
	MW-76C**	0.629	N
	PMW-85C**	0.49	N
2 Methylnaphthalene	MW-23C*	28	N
	MW-17	18.22	N
	MW-76C**	0.688	N
	PMW-85C**	0.49	N
Dibenzofuran	MW-23C*	46	N
	MW-17	23.94	N
	MW-76C**	0.164	N
	PMW-85C**	0.098	N
Naphthalene	MW-23C*	83	***NA – 41 mg/L (>S) (Res, 30-ac Source)
	MW-17	48.13	***NA – 41 mg/L (>S) (Res, 30-ac Source)
	MW-76C**	0.753	N
	PMW-85C**	0.49	N

Note: * - Monitoring well MW-23C is within the proposed soil cap area and will be plugged and abandoned. Well MW-17C will be considered a near-source AMP for the C-TZ.
** - Proposed well PMW-85C will be evaluated as the downgradient alternate POE well following installation, replacing MW-76C as the downgradient POE well.
*** - $^{Air}GW_{Inh-V}$ PCL for naphthalene not applicable since solubility for naphthalene (31.4 mg/L) is less than $^{Air}GW_{Inh-V}$. In addition, the C-TZ GWBU underlies other GWBUs, where upward vapor migration is not possible.

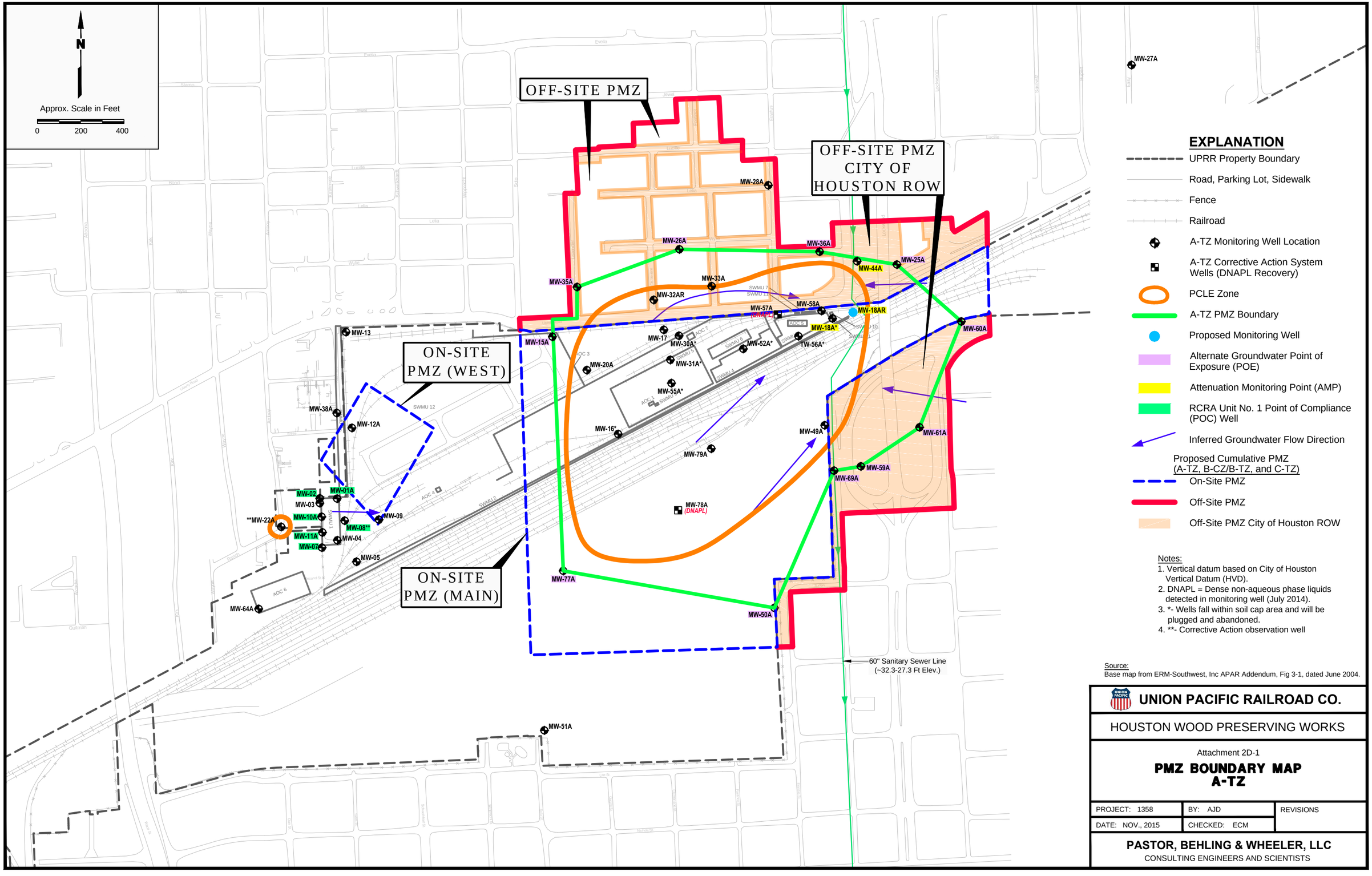
Attenuation Action Levels were not developed for other COCs since the primary COCs listed above define the PCLE Zone.

The proposed PMZ and AMPs for the C-TZ are shown on Attachment 2D-3.

ATTACHMENT 2D

PLUME MANAGEMENT ZONE MAP

ATTACHMENT 2D – 1 PMZ BOUNDARY MAP – A-TZ
ATTACHMENT 2D – 2 PMZ BOUNDARY MAP – B-CZ/B-TZ
ATTACHMENT 2D – 3 PMZ BOUNDARY MAP – C-TZ



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- A-TZ Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- A-TZ PMZ Boundary
- Proposed Monitoring Well
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ
(A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2D-1

PMZ BOUNDARY MAP A-TZ

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

N

Approx. Scale in Feet

0 200 400

OFF-SITE PMZ

OFF-SITE PMZ CITY OF HOUSTON ROW

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

MW-67B
PMW-84B
PMW-83B
MW-63B
MW-68B
MW-33BR
MW-36B
**PMW-82B
MW-35B**
MW-32B (DNAPL)
MW-70B (DNAPL)
MW-71B
MW-57B
MW-72B*
MW-15B
MW-55B*
MW-73B*
MW-74B
**MW-49B
MW-59B
MW-75B (DNAPL)
MW-80B
MW-81B
MW-39B
MW-38B
MW-12B
MW-40B
(DNAPL)
MW-42B
MW-62B
TW-41B
MW-41B (DNAPL)
P-11
P-12
MW-10B
MW-11B
P-10
**MW-22B
SWMU 12
SWMU 9
SWMU 6
SWMU 5
SWMU 4
SWMU 11
SWMU 10
AOC 1
AOC 4
AOC 6

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- B-CZ/B-TZ Monitoring Well Location
- B-CZ/B-TZ Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- B-CZ/B-TZ PMZ Boundary
- Proposed Monitoring Well
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **-Corrective Action observation well

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2D-2

PMZ BOUNDARY MAP B-CZ/B-TZ

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

N

Approx. Scale in Feet

0 200 400

OFF-SITE PMZ

OFF-SITE PMZ CITY OF HOUSTON ROW

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

MW-27C
MW-28C
PMW-83C
MW-68C
MW-45C (DNAPL)
MW-54C
MW-25C
MW-46C (DNAPL)
MW-44C (DNAPL)
MW-34CR
MW-18C*
MW-15C
MW-17C
MW-23C (DNAPL)
MW-19C*
MW-47C
MW-48C
MW-12C
MW-21C
PMW-85C
MW-76C**
PMW-86C**
MW-51C

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- C-TZ Monitoring Well Location
- C-TZ Corrective Action System Wells (DNAPL Recovery)
- PCLE Zone
- C-TZ PMZ Boundary
- Proposed Monitoring Well
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- Inferred Groundwater Flow Direction

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. *- Wells fall within soil cap area and will be plugged and abandoned.
4. **- Corrective Action observation well

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2D-3

PMZ BOUNDARY MAP C-TZ

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

ATTACHMENT 2E

ATTENUATION ACTION LEVELS DETERMINATION

ATTACHMENT 2E
ATTENUATION ACTION LEVELS DETERMINATION

Introduction

As described in this RAP, benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene are the most prominent chemicals of concern (COCs) where the critical Protective Concentration Levels (cPCL) exceedances for these COCs define the PCL Exceedance (PCLE) Zone in each of the groundwater-bearing units (GWBUs). Therefore, the attenuation action levels (AALs) developed for these five COCs.

TCEQ requirements related to the development of attenuation monitoring points (AMPs) and AALs are specified in §350.33(f)(4)(D). PMZ components are described in sections of three guidance documents, TRRP-28 - *Application of Remedy Standards A and B* (TCEQ, 2001a), TRRP-29 - *Soil and Groundwater Response Objectives* (TCEQ, 2001b), and TRRP-33 - *Monitored Natural Attenuation Demonstrations* (TCEQ, 2001c). These regulations and guidance documents were used as the basis for establishing AMPs and AALs, as described below.

Attenuation Monitoring Point Selection

TRRP requirements in §350.33(f)(4)(D) specify that: "*The person shall establish groundwater attenuation monitoring points beginning at an appropriate hydraulically upgradient location within the groundwater PCLE zone and continuing down the approximate central flow path of the COCs to the downgradient extent of the PMZ.*" As discussed in Attachment 1A of the RAP, potentiometric surface maps from the July 2014 sampling event for each of the four transmissive zones, A-TZ, B-TZ, C-TZ, and D-TZ (Attachment 1A Figures 5A-1 through and 5A-4, respectively) were prepared to evaluate the groundwater flow direction in each GWBU and to develop AMPs. Below is a discussion for the GWBUs where AALs are proposed:

- A-TZ - Groundwater in the A-TZ generally flows from west to east across the Site at a gradient ranging from approximately 0.0009 ft/ft to 0.011 ft/ft (approximate average of 0.006 ft/ft), with a groundwater divide on the east side of the Site just west of the Lockwood Road Bridge (Figure 5A-1).

- B-TZ/B-CZ - Groundwater in the B-TZ/B-CZ generally flows from west to east-northeast across the Site at gradients ranging from 0.005 ft/ft to 0.011 ft/ft, with an average of approximately 0.008 ft/ft (Figure 5A-2). As shown on Figure 5A-2, there is a piezometric high near the west perimeter of the Site, similar to the A-TZ. The highest groundwater elevation in the B-TZ in July 2014 was 43.15 feet HVD (MW-42B), and lowest elevation in the B-TZ wells was 37.22 feet HVD (MW-68B). The highest groundwater elevation in the B-CZ in July 2014 was 40.46 feet HVD (MW-36B), and the lowest elevation in the B-CZ wells was 32.71 feet HVD (MW-67B).

- C-TZ - The groundwater flow direction in the C-TZ is from northeast to southwest across the Site (Figure 5A-3) at a gradient about 0.001 ft/ft.

Also provided in Attachment 1A, individual COC concentration maps for the most common groundwater COCs at the Site (benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran,

and naphthalene) were prepared for the three zones at the Site using the July/August 2014 groundwater data:

- A-TZ - Figures 5B-5 through 5B-9,
- B-CZ/B-TZ - Figures 5B-10 through 5B-14, and
- C-TZ - Figures 5B-15 through 5B-19.

Although these maps represent concentrations in samples collected in July/August 2014, the COC distributions are similar to those observed during previous monitoring periods.

For establishing AMPs, the lateral and vertical distribution of creosote dense non-aqueous phase liquid (DNAPL) leads to a larger "source" area. The PCLE Zones in each of the GWBUs are closely tied to where DNAPL was observed either in soil borings or in the individual monitoring wells. Groundwater analytical data suggest that there is not a high rate of dissolved constituent migration beyond the DNAPL areas. This is supported with groundwater analytical data from each GWBU that indicate the distribution of COCs dissolved in Site groundwater is relatively stable in the source areas. Therefore, AMPs were selected based on the distribution of COCs and presence of DNAPL in the areas.

The groundwater flow conditions and COC distribution in the A-TZ groundwater lead to establishing AMPS near the northeast portion of the plume near the sanitary sewer line (see RAP Worksheet 2.1 for details). For the B-CZ groundwater PCLE Zone on the northeast side of the Site, AMPs leading from MW-70B (off-site, and contains DNAPL) to MW-67B in order to ensure groundwater COC concentrations do not exceed the cPCLs at the point of exposure (MW-67B). For the C-TZ groundwater PCLE Zone, AMPs were selected from MW-23C (contains DNAPL, toward the upgradient portion of the Site) to MW-76C in order to ensure groundwater COC concentrations do not exceed the cPCLs at the POE (just beyond MW-76C, on-site).

Based on the groundwater flow paths and COC distributions, the following AMPs were selected for each GWBU:

- A-TZ AMPs: MW-18A, MW-25A (also alternate point of exposure (POE) well), and MW-44A;
- B-CZ AMPs: MW-70B, MW33BR, MW-63B, and MW-67B (also alternate POE well);
- C-TZ AMPs: MW-17C, MW-23C, and proposed well PMW-85C .

The proposed AMPs for each GWBU are included in the proposed PMZ, as shown on Attachment 2D-1, 2D-2, and 2D-3 for the A-TZ, B-CZ, and C-TZ units, respectively. As described below, AALs were developed for each of these AMPs.

Attenuation Action Level Calculation

As specified in §350.33(f)(4)(D)(ii), AALs are calculated for each COC at each AMP in order for the critical groundwater PCLs to not be exceeded at the alternate POE wells. Since some natural attenuation of COCs have been observed at the Site (as indicated by the stable/declining concentration trends discussed in this attachment) and future natural attenuation of these COCs is anticipated, proposed AALs were developed based on the procedures described in Section 3.2.1 of TRRP-33. Specifically, the "Method One" approach (a graphical technique based on empirical data from previous monitoring events) provided in that guidance document was used. This approach involves plotting COC concentrations against distance from the COC source to the

groundwater POE using existing monitoring data. A first-order curve is then fitted from a point near the source area (after accounting for natural variability) to the POE. The concentrations represented by this line at the identified AMPs are calculated as AALs. As noted in TRRP-33: "The data used to develop the curves should be selected so that the method accounts for routine variations in the data due to seasonal effects or sampling variability, such as by: 1) using the upper range of historical data to construct the AAL first order line; or 2) accounting for some level of exceedences; or 3) using a moving average over the long-term monitoring data in each well; or 4) some other method." As illustrated in the example in this guidance, the natural logarithm of the concentration data are typically plotted on the y-axis to allow the first order decay curve to be plotted as a straight line.

In a typical evaluation, as described in TRRP-33, AALs are then selected from the AAL line to correspond to the distance that the AMP is located from the source (or in regards to the HWPW where DNAPL is present). The natural logarithm (Ln) of the y-coordinate at each of these points is then calculated to establish the AAL at each AMP. The calculated AALs for each GWBU and each primary COC (benzene, 2,4-dimethylphenol, 2-methylnaphthalene, dibenzofuran, and naphthalene) are shown on the following:

- A-TZ – Attachments 2E-1 thorough 2E-5;
- B-CZ – Attachments 2E-6 thorough 2E-10; and
- C-TZ – Attachments 2E-11 thorough 2E-15.

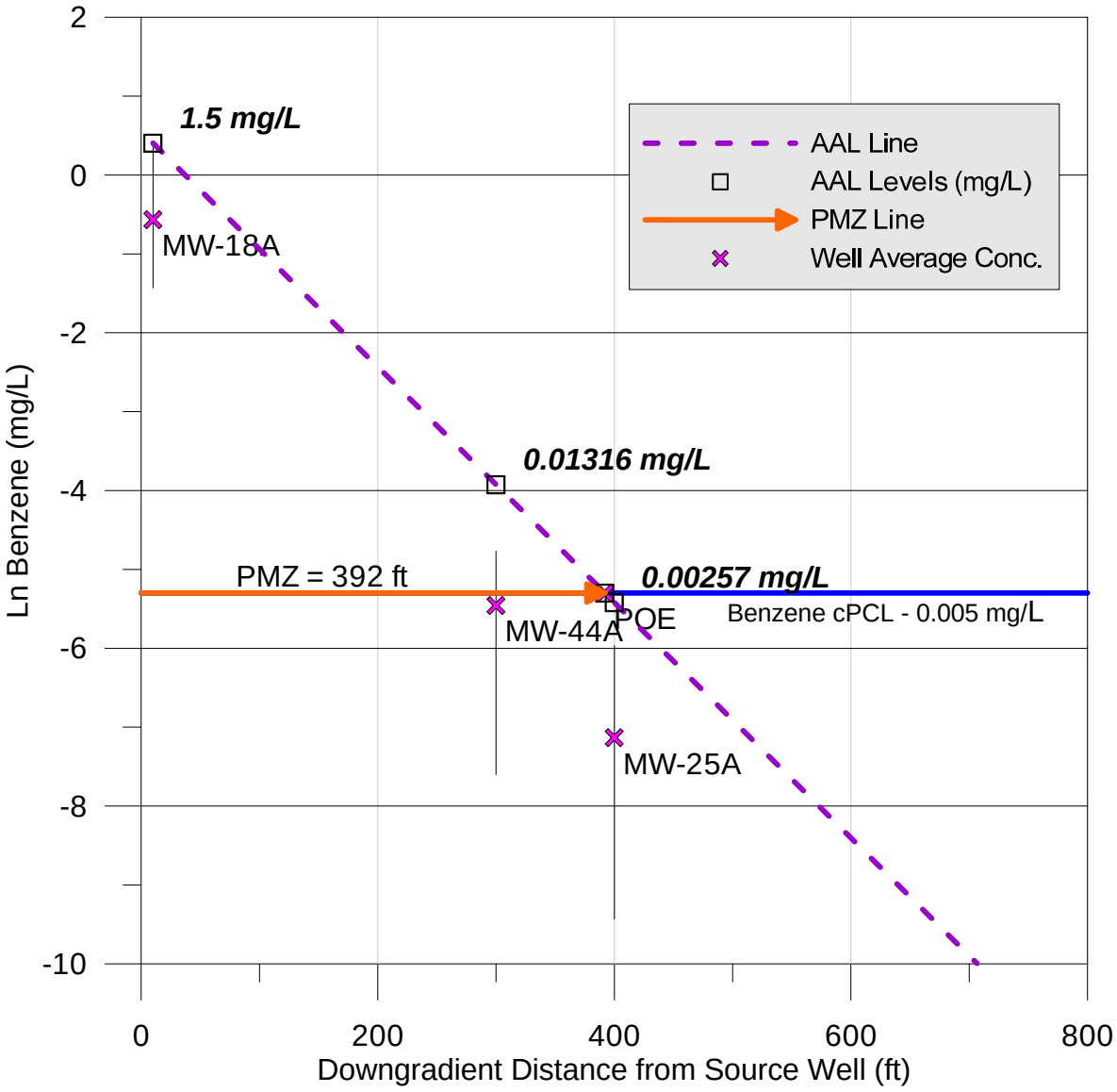
The calculated AALs are summarized below.

GWBU	AMP	Benzene (mg/L)	2,4-Dimethylphenol (mg/L)	2-Methylnaphthalene (mg/L)	Dibenzofuran (mg/L)	Naphthalene (mg/L)
A-TZ	MW-18A	1.5	24	1.5	0.52	26.16
A-TZ	MW-44A	0.0132	1.25	0.189	0.146	1.42
A-TZ	MW-25A	0.005*	0.49*	0.098*	0.098*	0.52
B-CZ	MW-70B	38.45	72.0	44.91	0.648	87.86
B-CZ	MW-33BR	3.26	18.18	2.60	0.385	21
B-CZ	MW-63B	0.21	3.94	0.11	0.216	4.28
B-CZ	MW-67B	0.005*	0.49*	0.098*	0.098*	0.49*
C-TZ	MW-23C	0.131	9.73	28	46	83
C-TZ	MW-17C	0.093	7.09	18.22	23.94	48.14
C-TZ	PMW-85C**	0.005	0.49	0.49	0.098	0.49

Notes: * - these AMPs also serve as alternate POE wells. The cPCL was used for the AAL at those points.
** - Proposed well PMW-85C will be installed following approval of the RAP. This alternate POE well will be compared to applicable PCLs to evaluate the PMZ.

ATTACHMENT 2E-1
ATTENUATION ACTION LEVELS - A-TZ BENZENE

UPRR Houston Wood Preserving Works, Houston, Texas

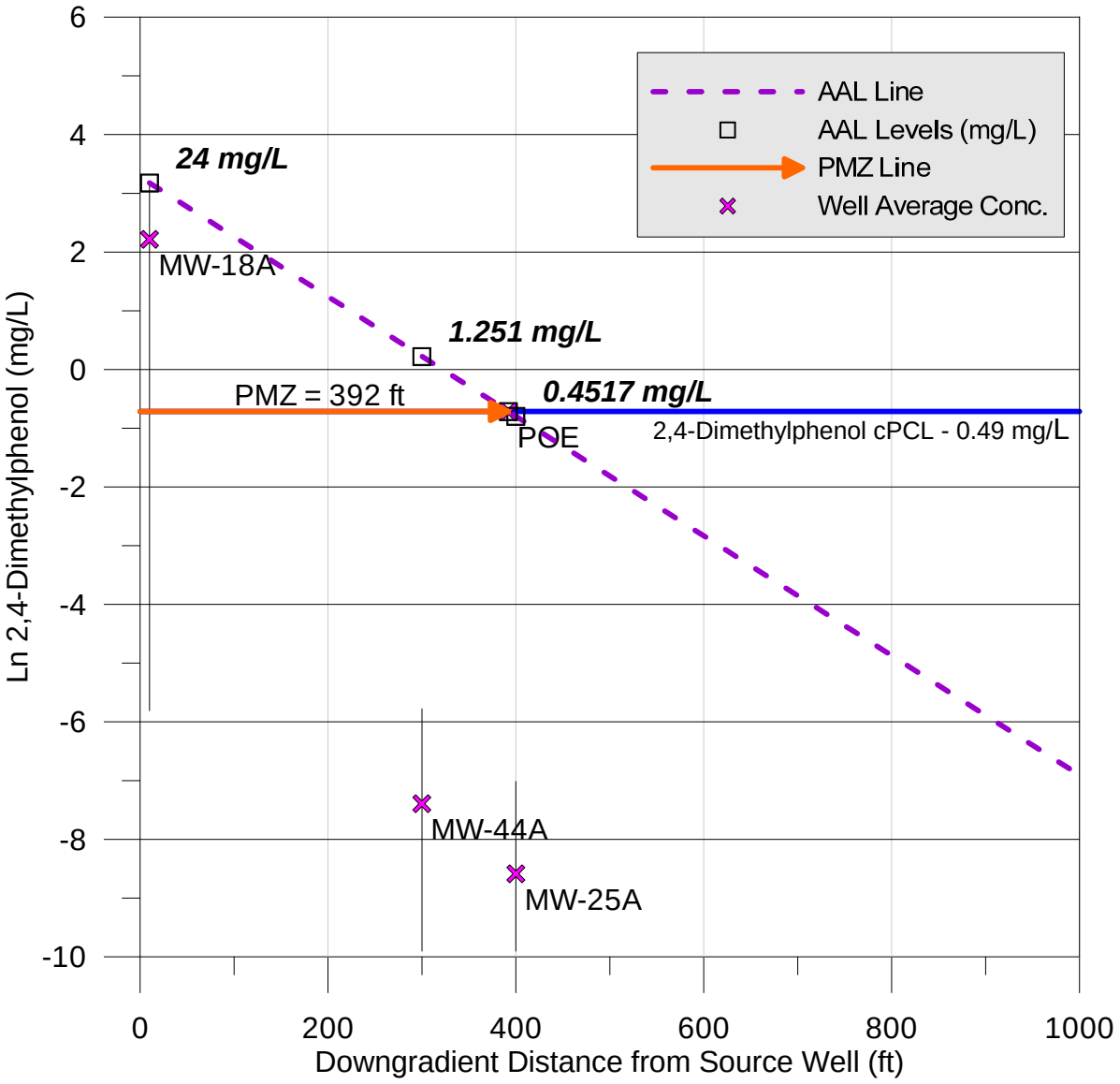


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-18A	1.5	0.239	0.569285714	**1.5000**
MW-44A	0.00849	0.0005	0.004277857	**0.0132**
MW-25A	0.00257	0.00008	0.0008005	**0.005***

Note: * MW-25A is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-2
ATTENUATION ACTION LEVELS - A-TZ 2,4-DIMETHYLPHENOL

UPRR Houston Wood Preserving Works, Houston, Texas

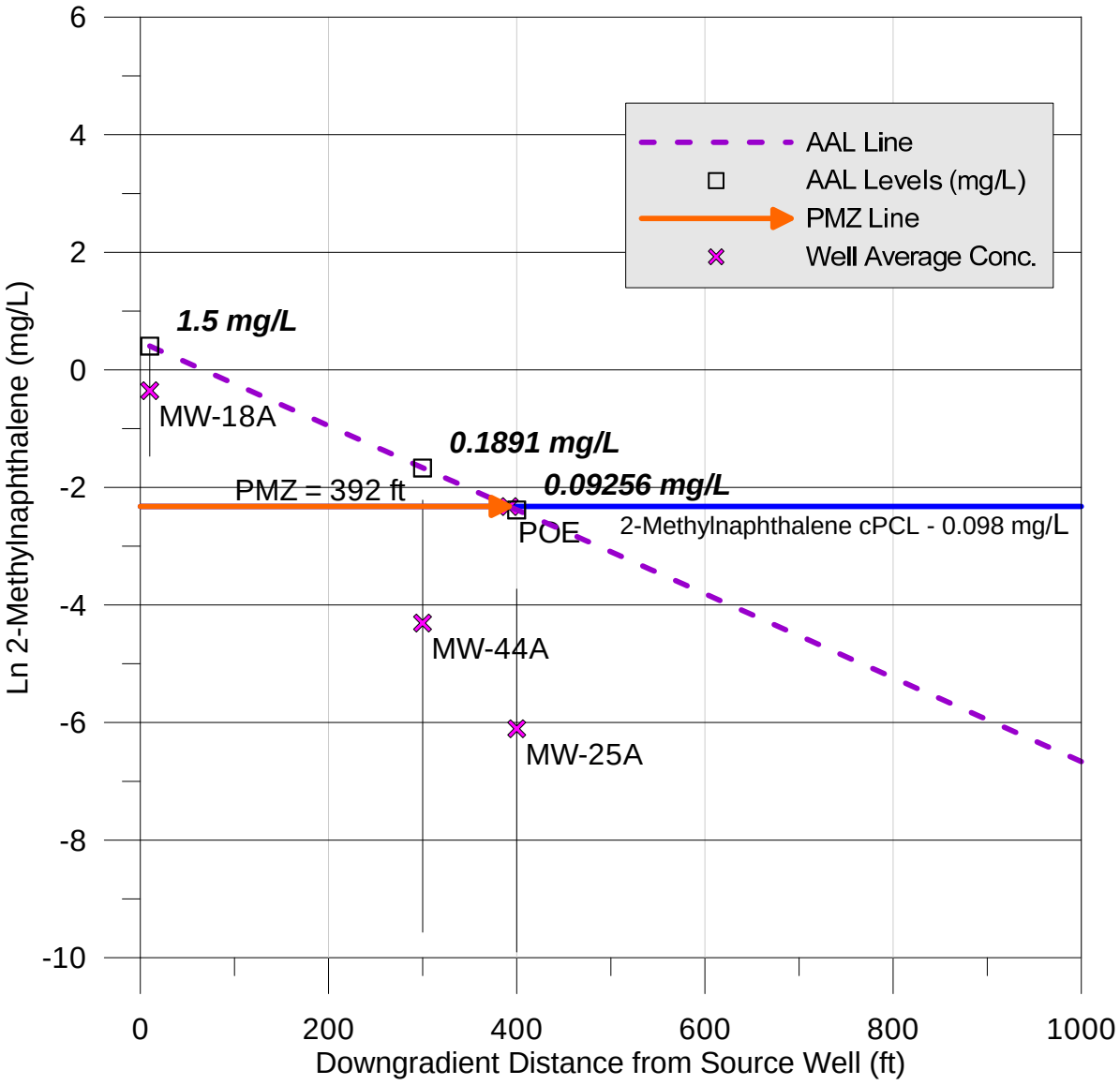


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-18A	24	0.003	9.216809524	**24.0000**
MW-44A	0.0031	0.00005	0.000618	**1.2509**
MW-25A	0.0009	0.00005	0.0001872	**0.49***

Note: * MW-25A is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-3
ATTENUATION ACTION LEVELS - A-TZ 2-METHYLNAPHTHALENE

UPRR Houston Wood Preserving Works, Houston, Texas

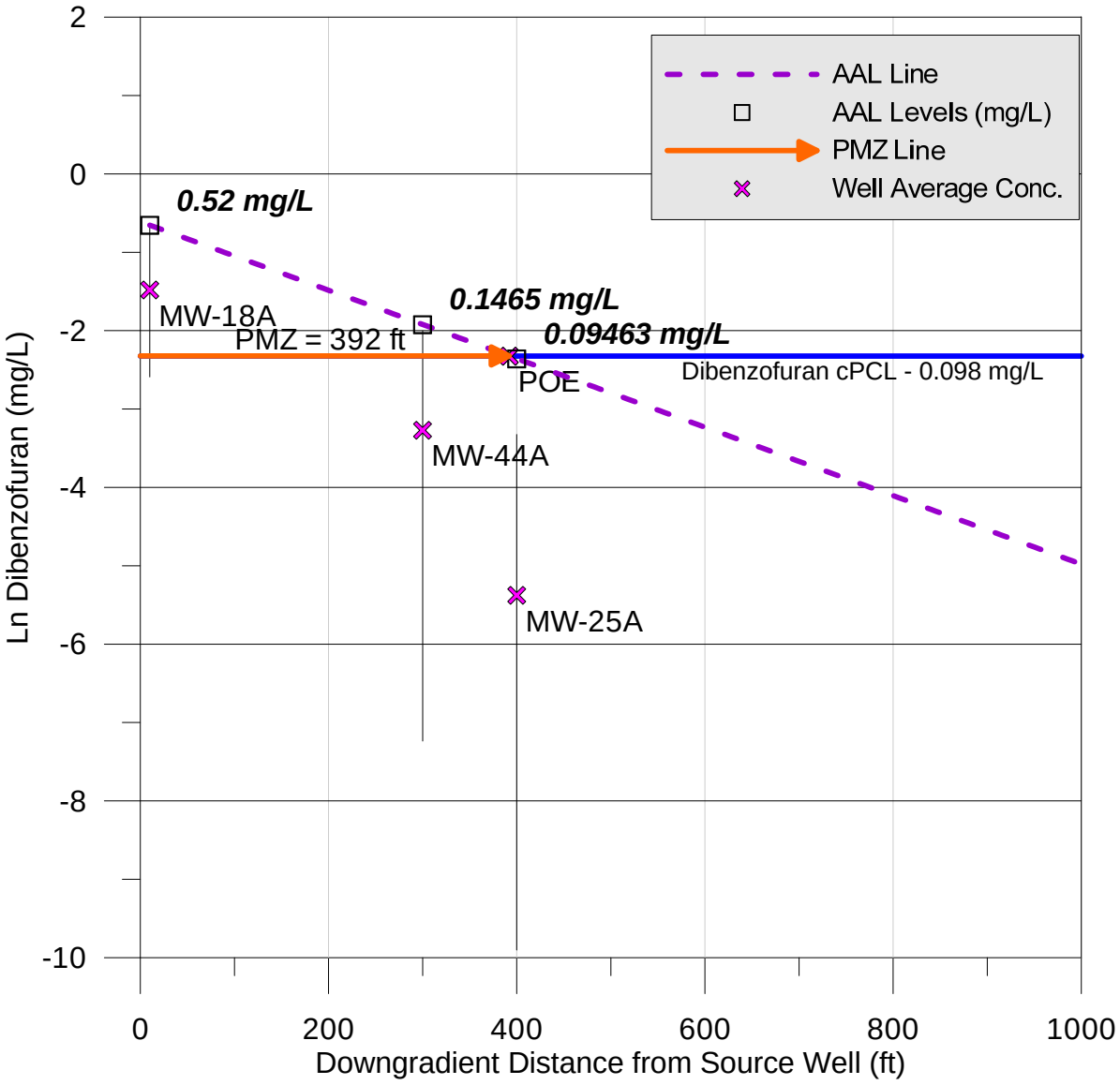


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-18A	1.5	0.23	0.704619048	**1.5000**
MW-44A	0.109	0.00007	0.013514071	**0.1891**
MW-25A	0.024	0.00005	0.00223715	**0.098***

Note: * MW-25A is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-4
ATTENUATION ACTION LEVELS - A-TZ DIBENZOFURAN

UPRR Houston Wood Preserving Works, Houston, Texas

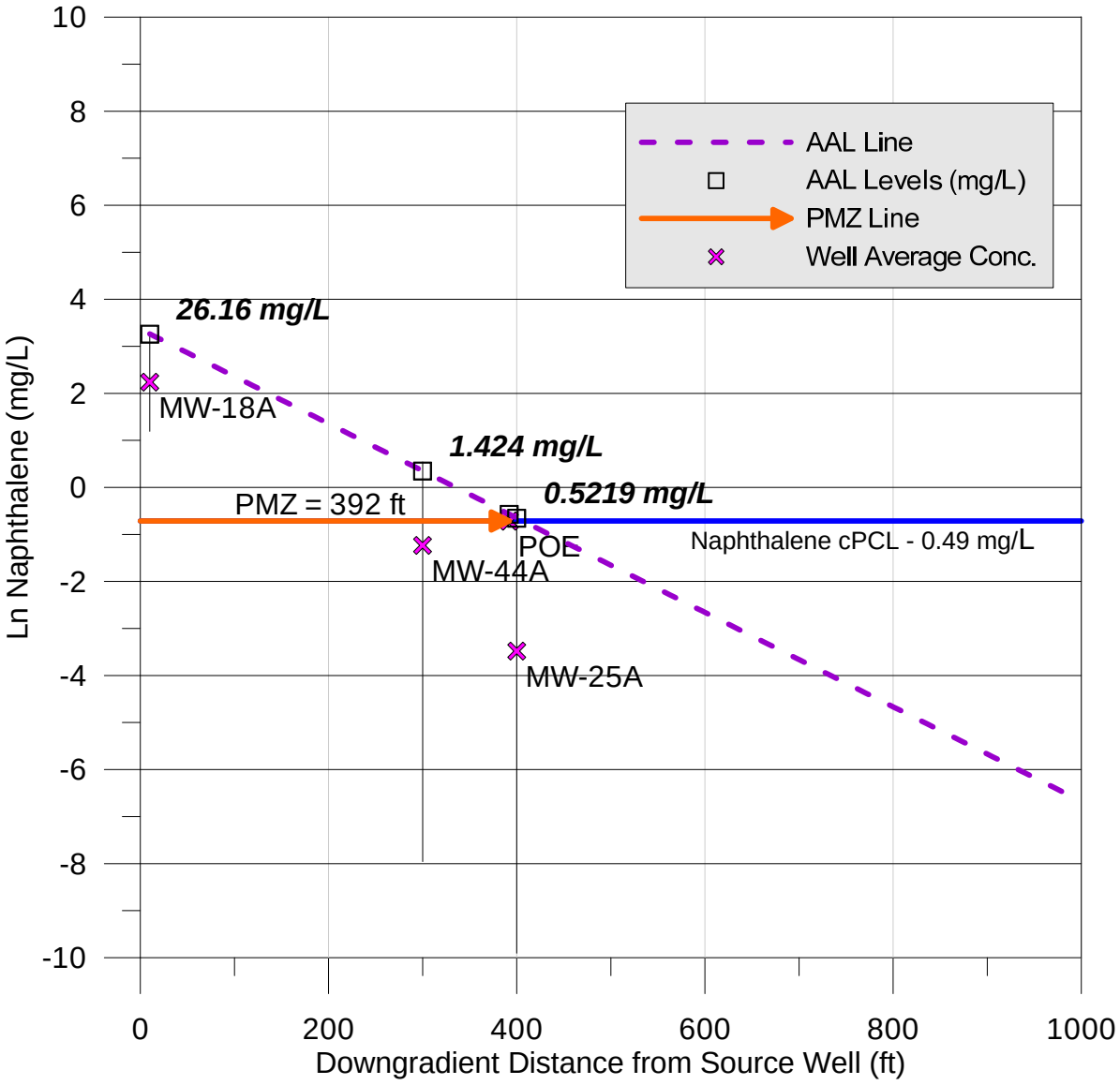


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-18A	0.52	0.075	0.228333333	**0.5200**
MW-44A	0.135	0.00072	0.038055857	**0.1465**
MW-25A	0.036	0.00005	0.00463859	**0.098***

Note: * MW-25A is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-5
ATTENUATION ACTION LEVELS - A-TZ NAPHTHALENE

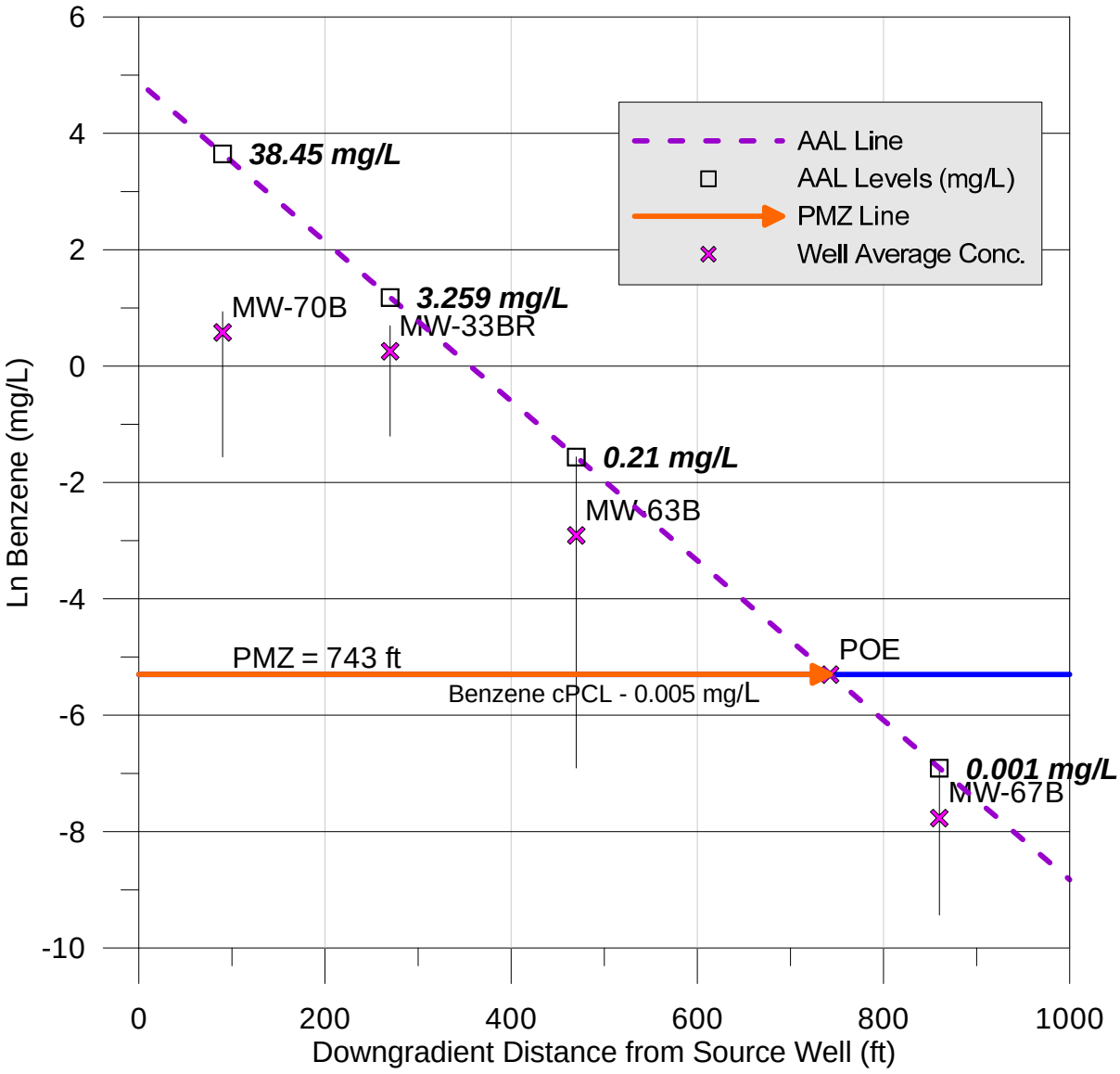
UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-18A	0.52	0.075	0.228333333	**26.1633**
MW-44A	0.135	0.00072	0.038055857	**1.4240**
MW-25A	0.036	0.00005	0.00463859	**0.5219**

ATTACHMENT 2E-6
ATTENUATION ACTION LEVELS - B-CZ BENZENE

UPRR Houston Wood Preserving Works, Houston, Texas

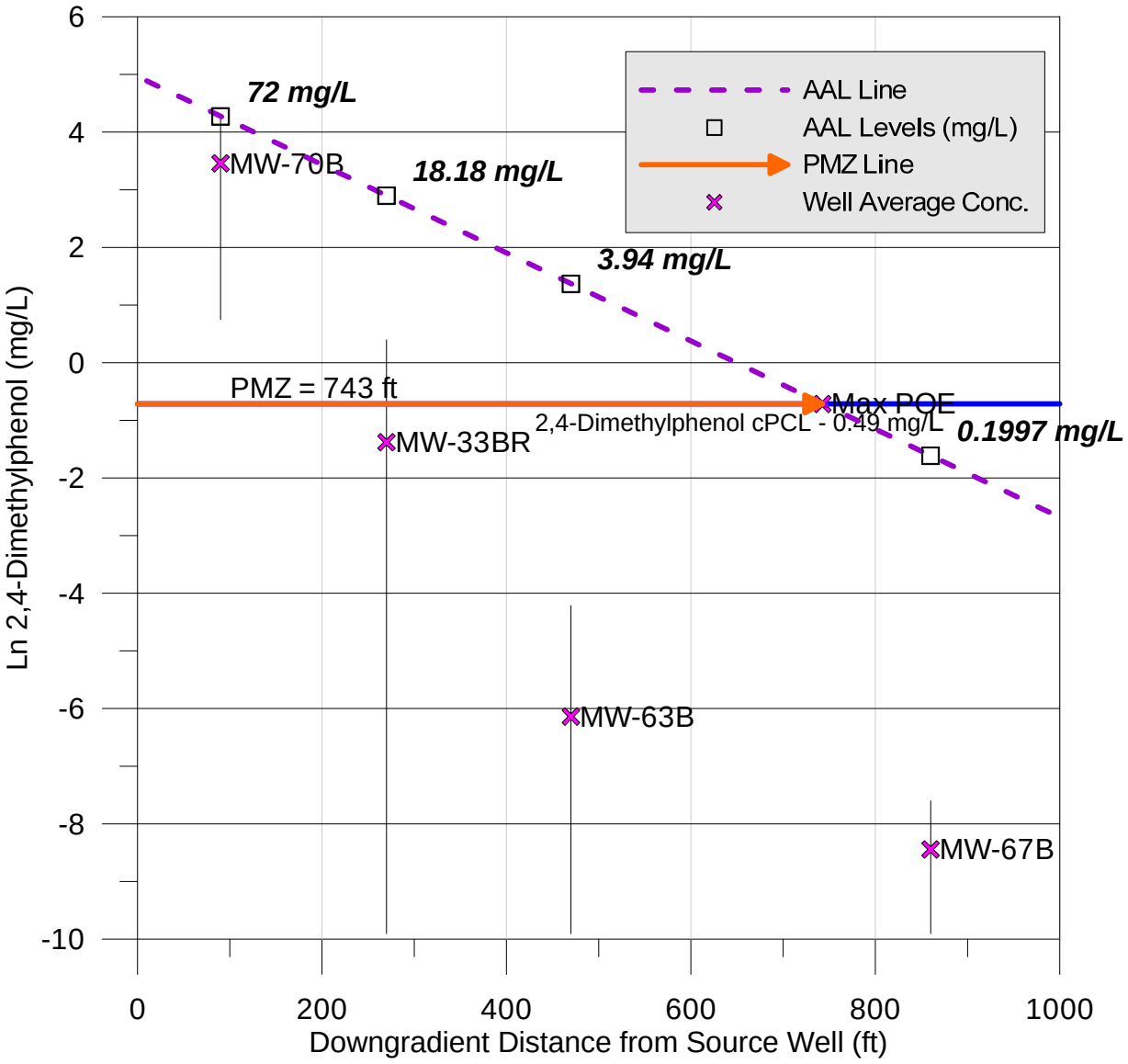


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-70B	2.55	0.21	1.79	**38.4498**
MW-33BR	2	0.3	1.296166667	**3.2591**
MW-63B	0.21	0.001	0.054612	**0.2100**
MW-67B	0.001	0.00008	0.000424444	**0.005***

Note: * MW-67B is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-7
ATTENUATION ACTION LEVELS - B-CZ 2,4-DIMETHYLPHENOL

UPRR Houston Wood Preserving Works, Houston, Texas

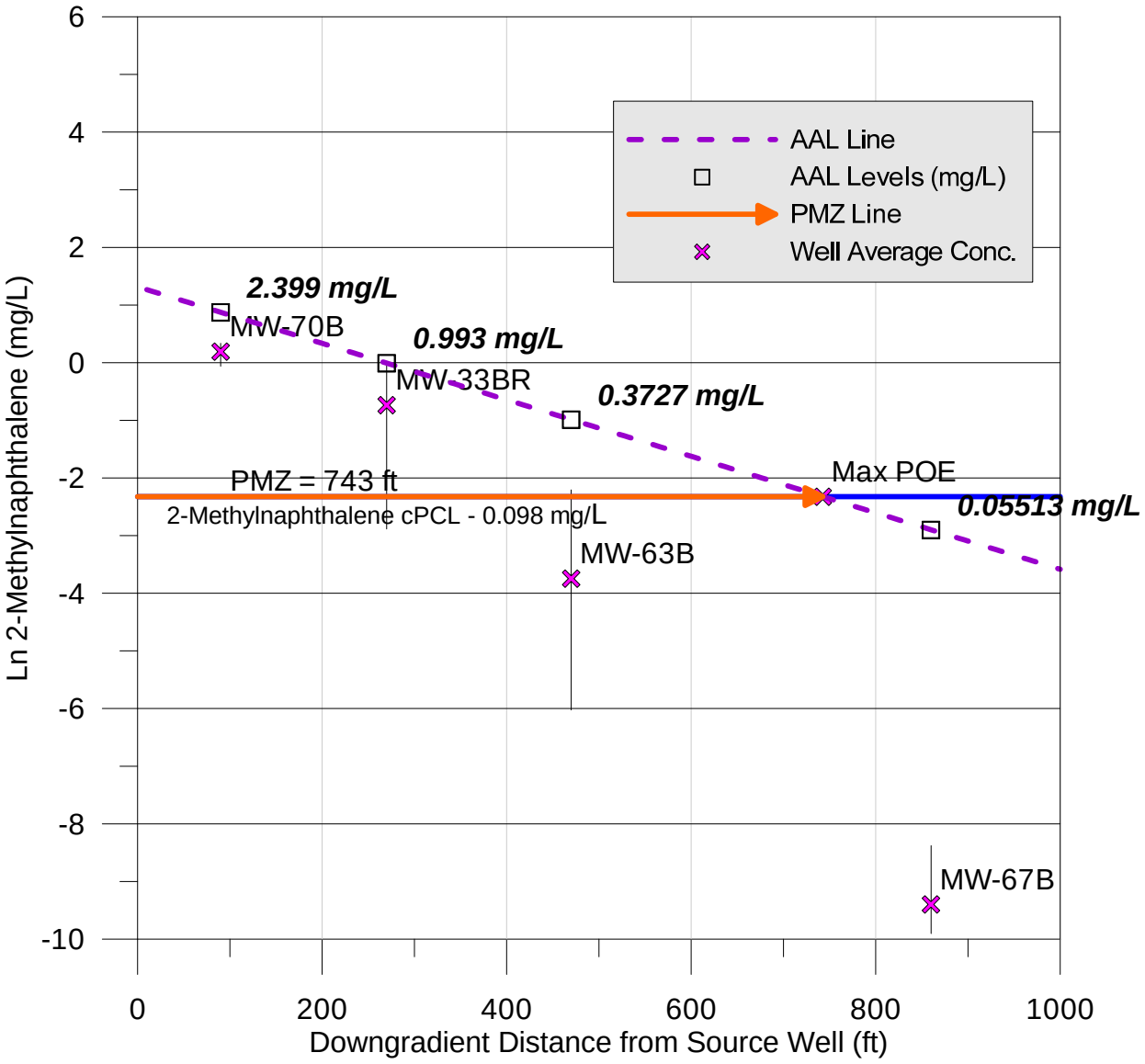


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-70B	72	2.11	31.8775	**72.0000**
MW-33BR	1.49	0.00005	0.252306833	**18.1805**
MW-63B	0.0148	0.00005	0.0021658	**3.9397**
MW-67B	0.0005	0.00005	0.000215889	**0.49***

Note: * MW-67B is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-8
ATTENUATION ACTION LEVELS - B-CZ 2-METHYLNAPHTHALENE

UPRR Houston Wood Preserving Works, Houston, Texas

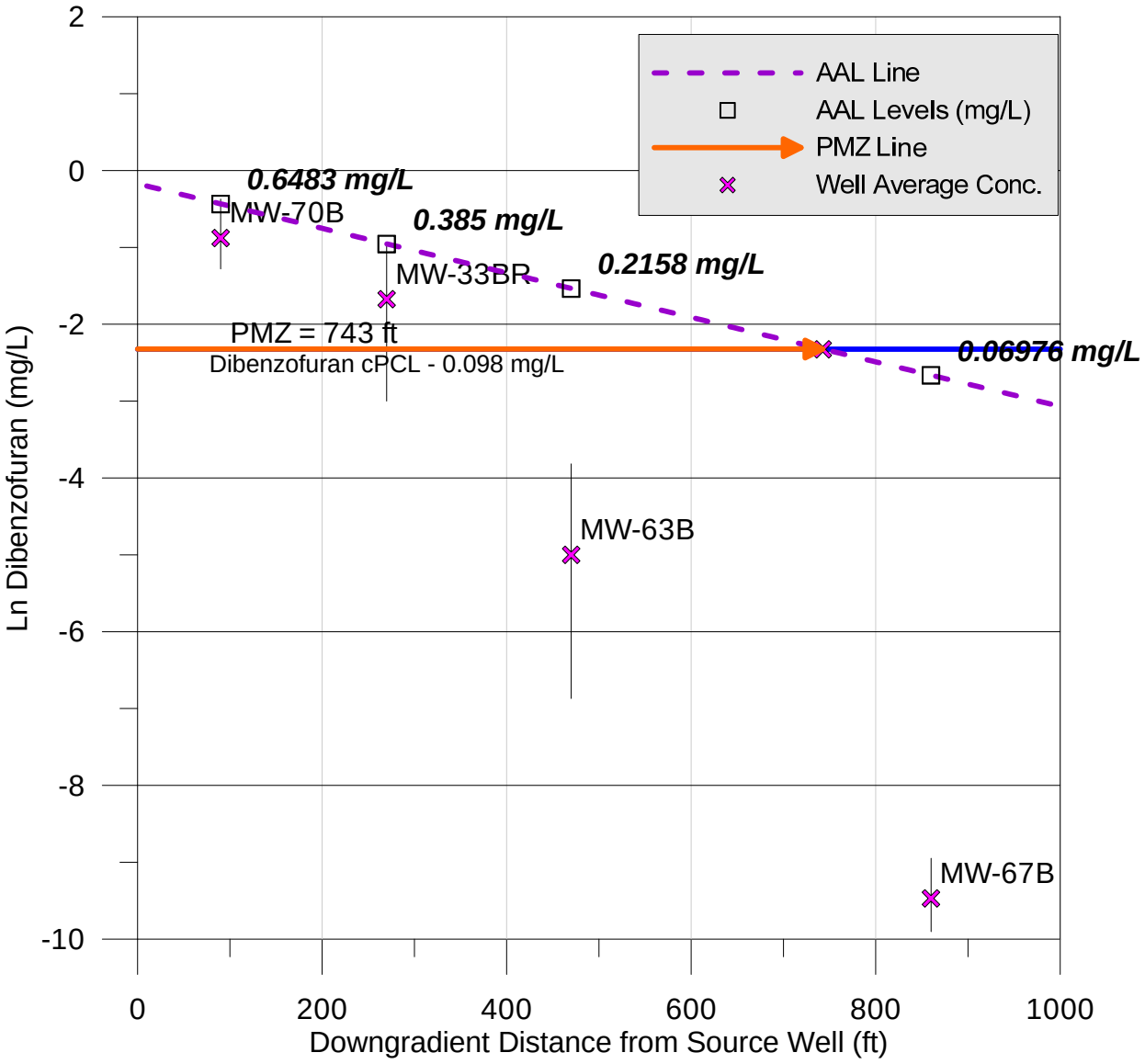


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-70B	1.4	0.94	1.215	**2.3988**
MW-33BR	0.993	0.0558	0.480633333	**0.9930**
MW-63B	0.11	0.00242	0.023688	**0.3727**
MW-67B	0.00023	0.00005	8.32556E-05	**0.098***

Note: * MW-67B is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-9
ATTENUATION ACTION LEVELS - B-CZ DIBENZOFURAN

UPRR Houston Wood Preserving Works, Houston, Texas

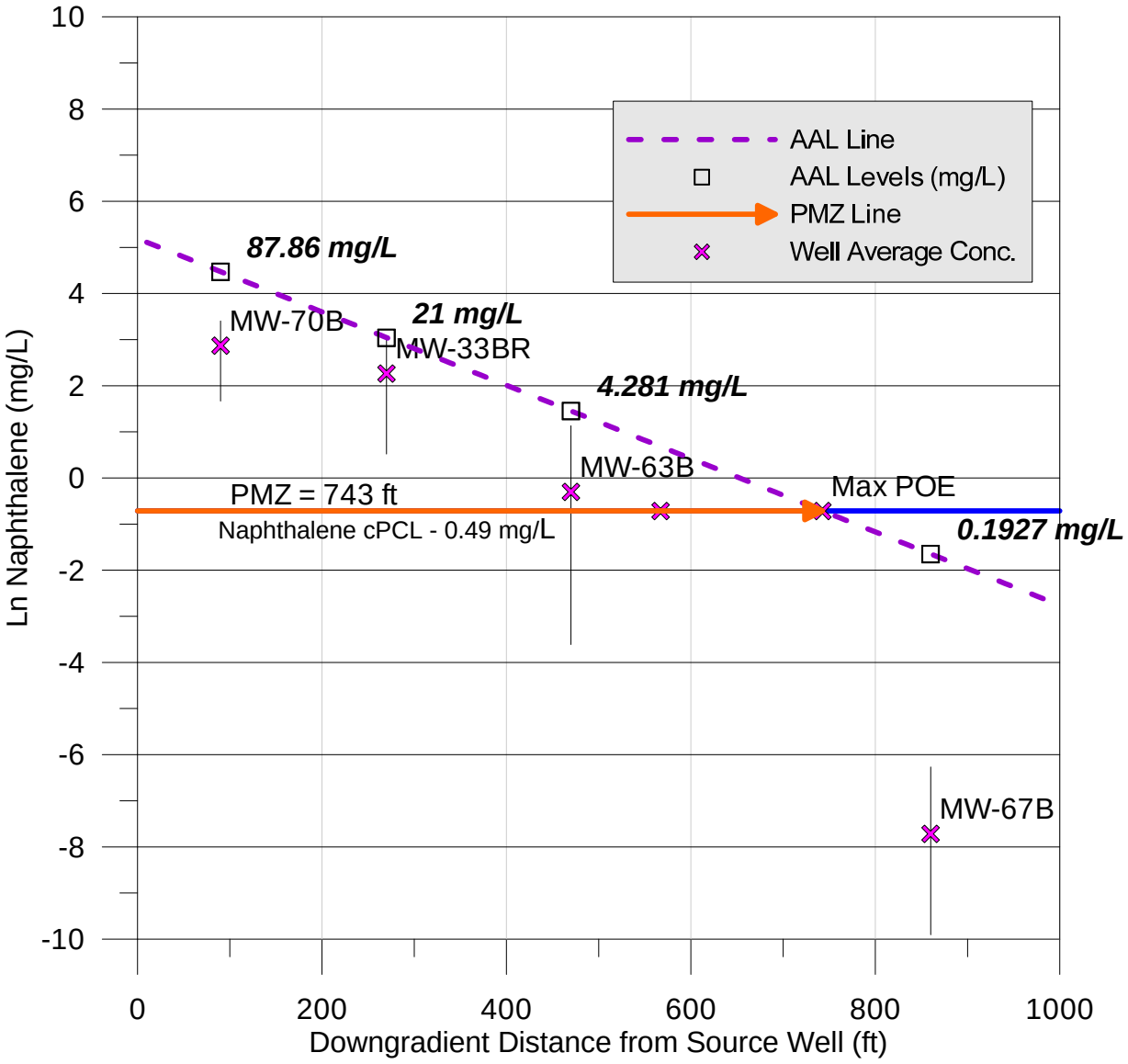


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-70B	0.69	0.278	0.417	**0.6483**
MW-33BR	0.385	0.0498	0.188083333	**0.3850**
MW-63B	0.022	0.00104	0.006753	**0.2158**
MW-67B	0.00013	0.00005	7.72778E-05	**0.098***

Note: * MW-67B is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-10
ATTENUATION ACTION LEVELS - B-CZ NAPHTHALENE

UPRR Houston Wood Preserving Works, Houston, Texas

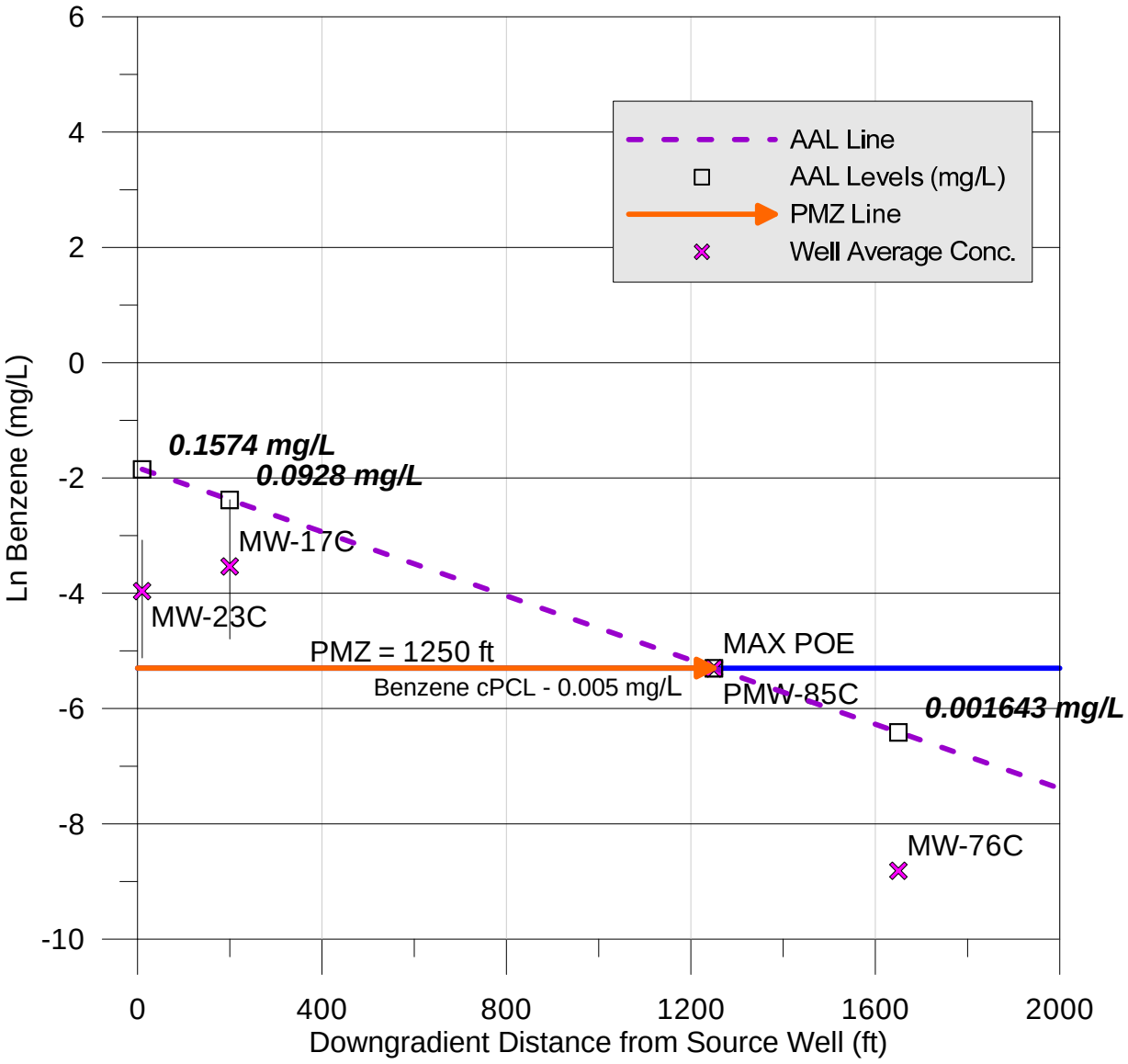


Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-70B	30.1	5.3	17.7	**87.8605**
MW-33BR	21	1.68	9.668333333	**21.0000**
MW-63B	3.1	0.027	0.7422	**4.2814**
MW-67B	0.0019	0.00005	0.000446789	**0.49***

Note: * MW-67B is an alternate POE Well, cPCL used for AAL at this well

ATTACHMENT 2E-11
ATTENUATION ACTION LEVELS - C-TZ BENZENE

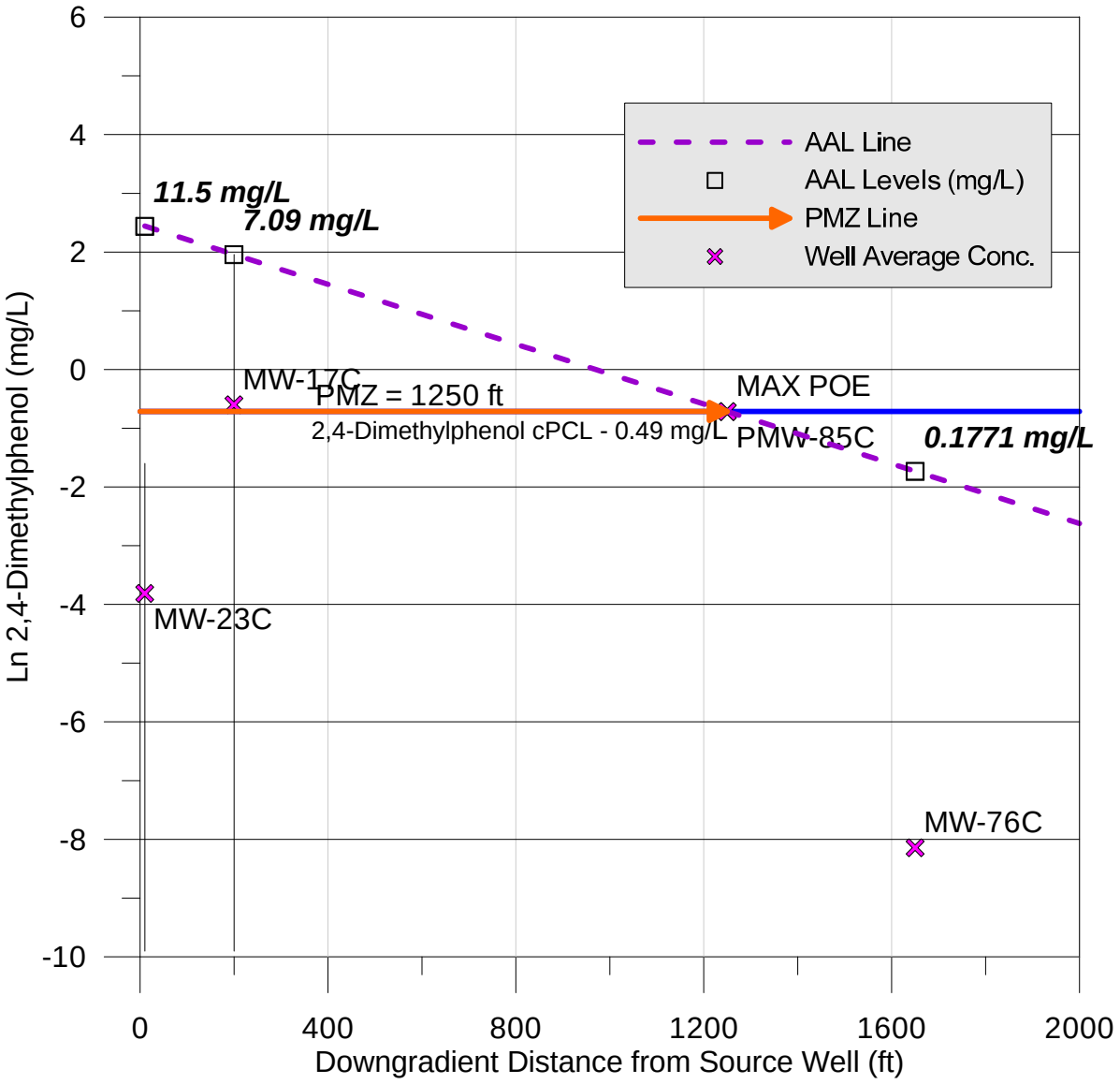
UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-17C	0.0928	0.0083	0.029270714	**0.0928**
MW-23C	0.046	0.00596	0.01908	**0.1574**
MW-76C	0.000149	0.000149	0.000149	**0.0016**

ATTACHMENT 2E-12
ATTENUATION ACTION LEVELS - C-TZ 2,4-DIMETHYLPHENOL

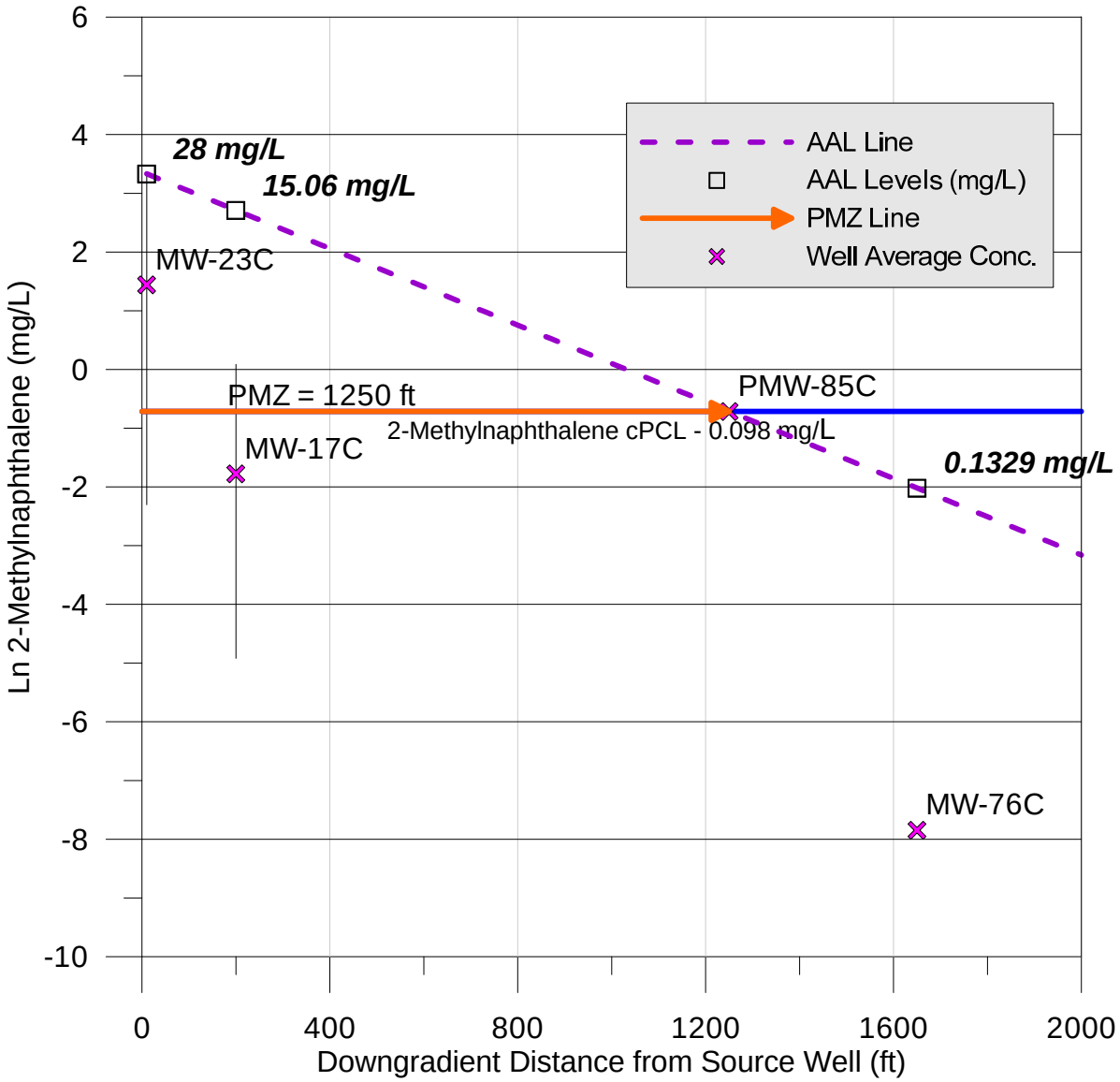
UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-17C	7.09	0.00005	0.55072925	**7.0900**
MW-23C	0.202	0.00005	0.022147333	**11.5000**
MW-76C	0.000292	0.000292	0.000292	**0.1770**

ATTACHMENT 2E-13
ATTENUATION ACTION LEVELS - C-TZ 2-METHYLNAPHTHALENE

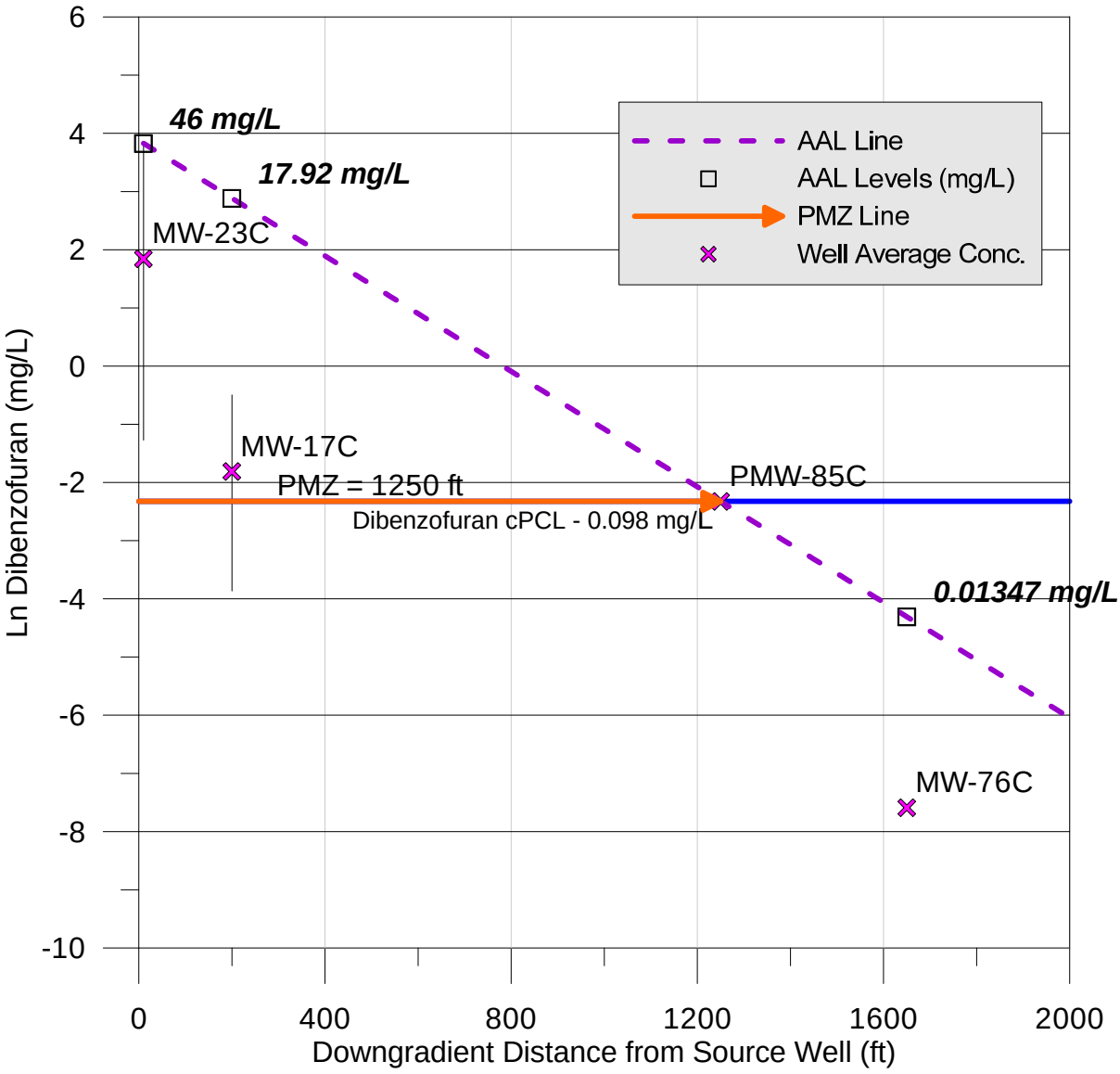
UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-17C	1.09	0.0073	0.16944375	**15.0600**
MW-23C	28	0.1	4.243	**28.0000**
MW-76C	0.000392	0.000392	0.000392	**0.1390**

ATTACHMENT 2E-14
ATTENUATION ACTION LEVELS - C-TZ DIBENZOFURAN

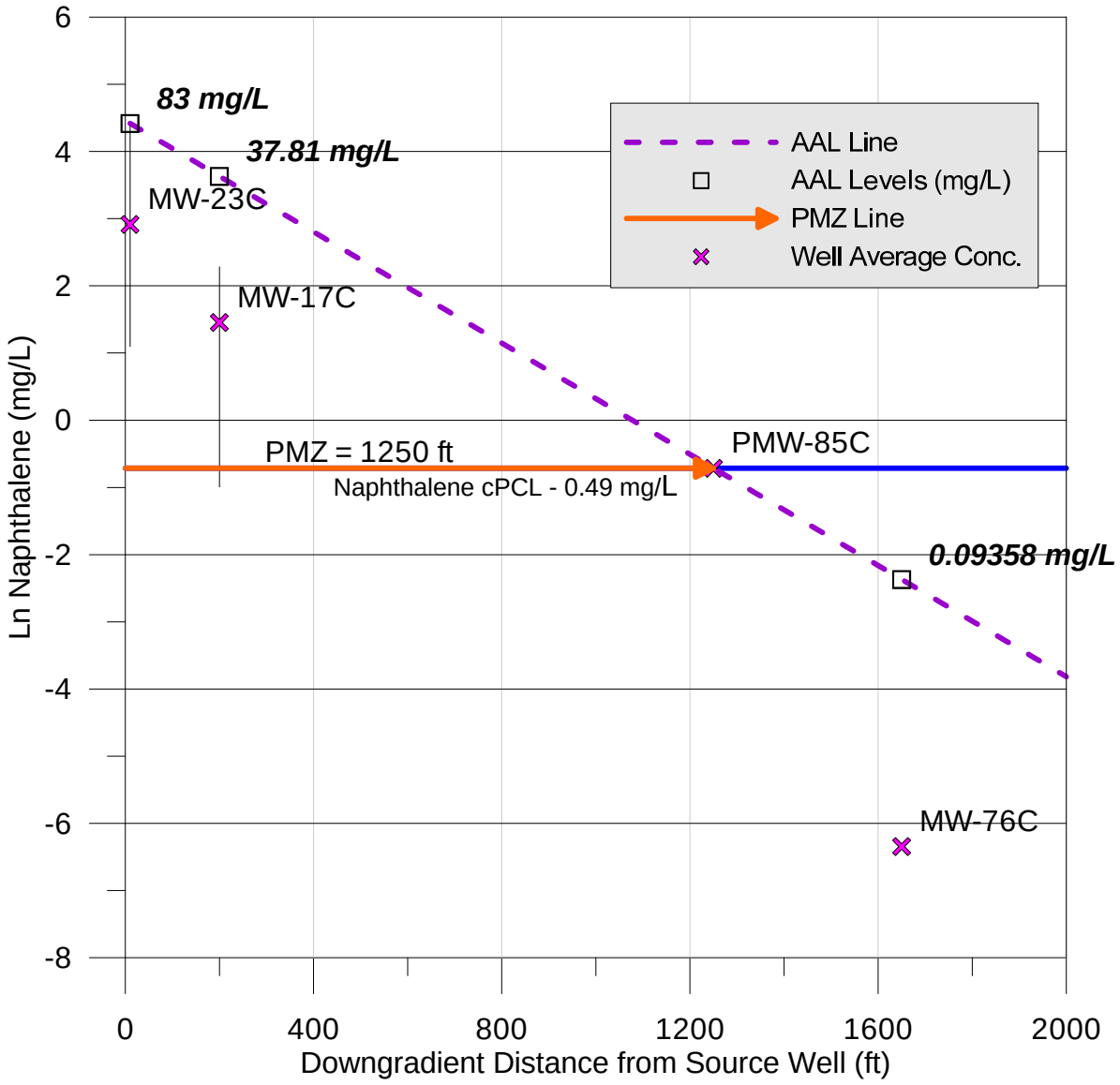
UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-17C	0.61	0.021	0.163975	**17.9200**
MW-23C	46	0.28	6.347466667	**46.0000**
MW-76C	0.000507	0.000507	0.000507	**0.0135**

ATTACHMENT 2E-15
ATTENUATION ACTION LEVELS - C-TZ NAPHTHALENE

UPRR Houston Wood Preserving Works, Houston, Texas



Well	Max (mg/L)	Min (mg/L)	Avg (mg/L)	**AALs (mg/L)**
MW-17C	9.8	0.37	4.2973125	**37.8100**
MW-23C	83	3	18.516	**83.0000**
MW-76C	0.00176	0.00176	0.00176	**0.0936**

ATTACHMENT 2E-16
Summary of Mann-Kendall Trend Analysis - A-TZ
UPRR Houston Wood Preserving Works

		Benzene 71-43-2	2,4-Dimethylphenol 105-67-9	2-Methylnaphthalene 91-57-6	Dibenzofuran 132-64-9	Naphthalene 91-20-3
Source	MW-12A	S	ND	NT	I	PD
	MW-16	S	S	S	PI	NT
	MW-17	S	NT	NT	NT	NT
	MW-18A	S	NT	I	I	PI
	MW-20A	S	S	S	S	NT
	MW-30A	S	S	NT	S	NT
	MW-31A	S	S	NT	NT	S
	MW-32A	NT	NT	NT	NT	NT
	MW-32AR	NT	NT	NT	NT	PI
	MW-52A	S	NT	S	S	S
	MW-55A	S	S	NT	S	NT
	MW-57A	D	D	S	NT	NT
	MW-58A	NT	NT	NT	PD	NT
	TW-56A	S	NT	S	NT	D
Tail	MW-01A	N/A	N/A	NT	I	NT
	MW-02	N/A	N/A	NT	NT	NT
	MW-05	ND	ND	NT	NT	NT
	MW-07	N/A	N/A	ND	ND	ND
	MW-08	N/A	N/A	ND	ND	ND
	MW-09	ND	ND	NT	NT	NT
	MW-10A	N/A	N/A	NT	NT	NT
	MW-11A	N/A	N/A	ND	ND	ND
	MW-13	ND	ND	NT	S	NT
	MW-15A	S	NT	NT	NT	I
	MW-22A	NT	ND	NT	NT	NT
	MW-24AR	ND	NT	NT	S	NT
	MW-25A	ND	ND	NT	NT	NT
	MW-26A	NT	ND	NT	NT	NT
	MW-28A	ND	ND	PD	NT	PD
	MW-33A	PI	PI	I	I	I
	MW-35A	ND	ND	NT	NT	NT
	MW-36A	ND	ND	NT	NT	NT
	MW-38A	ND	ND	NT	ND	NT
	MW-44A	I	NT	I	NT	NT
	MW-49A	S	NT	S	S	S
	MW-50A	ND	NT	NT	NT	NT
	MW-51A	ND	ND	ND	ND	NT
	MW-59A	ND	ND	NT	NT	NT
	MW-60A	ND	ND	NT	NT	NT
	MW-61A	ND	ND	ND	ND	S
	MW-64A	ND	ND	NT	NT	NT
	MW-69A	ND	NT	NT	NT	NT
	MW-77A	ND	ND	N/A	N/A	N/A
	MW-78A	N/A	N/A	N/A	N/A	N/A
	MW-79A	N/A	N/A	N/A	N/A	N/A

Notes:

N/A - Not applicable due to insufficient data.

NT - No trend
ND - Non-detect
D - Decreasing (green)
PD - Probably decreasing (yellow)
S - Stable (blue)
PI - Probably increasing (pink)
I - Increasing (red)

1. Grey highlight indicates concentrations less than cPCLs, regardless of trend.

ATTACHMENT 2E-17
Summary of Mann-Kendall Trend Analysis B-CZ/B-TZ
UPRR Houston Wood Preserving Works

		Benzene 71-43-2	2,4-Dimethylphenol 105-67-9	2-Methylnaphthalene 91-57-6	Dibenzofuran 132-64-9	Naphthalene 91-20-3
Source	MW-10B	N/A	N/A	N/A	NT	PI
	MW-11B	N/A	N/A	N/A	S	NT
	MW-14	ND	ND	PD	NT	PD
	MW-15B	NT	ND	NT	S	NT
	MW-39B	ND	ND	NT	NT	NT
	MW-40B	D	PD	S	I	S
	MW-49B	PI	I	I	PI	I
	MW-55B	S	NT	NT	S	NT
	MW-57B	S	NT	S	S	S
	MW-62B	ND	ND	PD	PD	D
	MW-73B	NT	NT	NT	NT	NT
	MW-74B	NT	NT	I	NT	NT
	MW-75B	S	NT	NT	NT	S
	P-10	N/A	N/A	N/A	ND	ND
	P-11	ND	ND	NT	PI	NT
	P-12	N/A	N/A	ND	ND	ND
	TW-41B	ND	NT	NT	NT	NT
Tail	MW-22B	NT	NT	NT	I	I
	MW-24B	ND	ND	ND	ND	NT
	MW-32B	NT	NT	NT	NT	NT
	MW-33B	S	NT	NT	NT	NT
	MW-33BR	S	NT	S	S	PD
	MW-35B	NT	ND	NT	S	NT
	MW-36B	ND	ND	NT	NT	NT
	MW-38B	ND	ND	NT	NT	NT
	MW-42B	ND	I	NT	S	NT
	MW-59B	ND	NT	ND	NT	NT
	MW-63B	NT	NT	PD	D	NT
	MW-67B	ND	NT	NT	NT	PD
	MW-68B	S	NT	NT	NT	S
	MW-70B	I	NT	NT	S	NT
	MW-71B	NT	NT	NT	NT	NT
	MW-72B	S	NT	NT	NT	NT
	MW-80B	N/A	ND	N/A	ND	N/A
	MW-81B	ND	ND	ND	ND	ND

Notes:

N/A - Not applicable due to insufficient data.

NT - No trend
ND - Non-detect
D - Decreasing (green)
PD - Probably decreasing (yellow)
S - Stable (blue)
PI - Probably increasing (pink)
I - Increasing (red)

1. Grey highlight indicates concentrations less than cPCLs, regardless of trend.

ATTACHMENT 2E-18
Summary of Mann-Kendall Trend Analysis - C-TZ
UPRR Houston Wood Preserving Works

		Benzene 71-43-2	2,4-Dimethylphenol 105-67-9	2-Methylnaphthalene 91-57-6	Dibenzofuran 132-64-9	Naphthalene 91-20-3
Source	MW-12C	ND	ND	NT	NT	S
	MW-15C	PD	NT	NT	NT	NT
	MW-17C	S	NT	NT	NT	NT
	MW-18C	NT	NT	I	I	I
	MW-19C	NT	NT	NT	PI	NT
	MW-21C	ND	NT	NT	NT	NT
	MW-23C	NT	PI	NT	NT	I
Tail	MW-24C	ND	ND	NT	ND	PD
	MW-25C	D	NT	NT	S	NT
	MW-27C	ND	ND	NT	ND	S
	MW-28C	ND	NT	S	ND	D
	MW-34C	N/A	N/A	N/A	N/A	N/A
	MW-34CR	N/A	ND	N/A	ND	N/A
	MW-44C	N/A	ND	N/A	N/A	N/A
	MW-47C	ND	NT	NT	ND	NT
	MW-48C	ND	NT	ND	NT	PD
	MW-51C	N/A	ND	ND	ND	N/A
	MW-53C	ND	ND	NT	ND	NT
	MW-54C	ND	NT	NT	I	NT
	MW-68C	PI	NT	NT	NT	PI
	MW-76C	N/A	ND	N/A	N/A	N/A

Notes:

N/A - Not applicable due to insufficient data.

NT - No trend
ND - Non-detect
D - Decreasing (green)
PD - Probably decreasing (yellow)
S - Stable (blue)
PI - Probably increasing (pink)
I - Increasing (red)

1. Grey highlight indicates concentrations less than cPCLs, regardless of trend.

Use this worksheet to justify the use of technical impracticability (TI) to modify the groundwater response objectives. Also complete Worksheet 2.2 to propose a plume management zone for the TI Zone. Include a map of the groundwater PCLE zone and area of technical impracticability in Attachment 2G. Include in the attachment any other documentation needed to make the justification. If technical impracticability is not proposed as part of the response action, do not submit this worksheet.

Describe the groundwater PCLE zone and demonstrate in accordance with *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration* (EPA OSWER Directive 9234.2-25), unless otherwise approved by TCEQ, why it is technically impractical to reduce the COC concentrations to the critical PCLs, taking into account all currently available remediation technologies, and hydrogeologic and chemical-specific factors. Identify the specific COCs and list the PCLs that cannot be achieved.

As discussed in the previous APARs and in the Worksheet 2.1, the shallow GWBUs have been contaminated with creosote-related DNAPL and associated dissolved COCs. Creosote DNAPL has been detected in the GWBUs as noted in soil borings and monitoring wells across the Site and in areas off site. PCLE Zones in each of the GWBUs is closely tied to where NAPL was observed in either soil borings or accumulated in monitoring wells. This suggests that there is not a high rate of dissolved constituent migration beyond the DNAPL areas. MNA of the COCs in groundwater appears to be limiting the migration of the groundwater PCLE Zones beyond where DNAPL has been noted; however, restoration of the groundwater to cPCLs in a reasonable timeframe may not be practicable per 30 TAC§350.33(f)(3).

According to U.S. Environmental Protection Agency (EPA) "Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration" (Office of Solid Waste and Emergency Response Directive 9234.2-25 (EPA, 1993), the goal of restoring contaminated groundwater within a reasonable time frame can be modified after an evaluation of technical impracticability. The EPA's technical impracticability guidance cites the following categories that can lead to a finding of technical impracticability:

1. Hydrogeologic factors
2. Contaminant factors
3. Remediation technology factors

Hydrogeological factors related to the Site include a complex lithology of sands, silts, and clays related to fluvial-deltaic depositional systems found in the Beaumont Formation. In regards to the contaminant at the Site, creosote is characterized as:

- a wood preservative that served as a fungicide, insecticide, miticide, and sporicide (EPA Website: Preliminary Risk Assessment for Creosote, EPA, 2007).
- a complex mixture of polycyclic aromatic hydrocarbons (PAHs), heterocyclic compounds, phenolic compounds, and a small fraction of benzene, toluene, ethylbenzene, and xylenes (BTEX) (Kiilerich, 1996); and
- highly insoluble and hydrophobic.

As a result, creosote DNAPL does not readily attenuate through biological decay or dissolution into the groundwater, and may persist in "pools" in the GWBUs and within the aquifer matrix indefinitely. Even with more aggressive responses such as thermally enhanced treatment that has been tried at similar creosote sites, groundwater response alternatives will not effectively treat groundwater to cPCLs within a reasonable timeframe. Therefore, restoration of the GWBUs below cPCLs is technically impracticable where creosote DNAPL exists because it is a continuing, long-term source of groundwater contamination.

Details of the TI demonstration and associated maps are provided in Attachment 2G. Attachment 2G-Figure 1 summarizes the factors affecting groundwater restoration potential related to the Site. Attachment 2G Figure 2 shows the proposed TI Zone for the Site. Attachment 2G-Figure 2 and 3 provides a conceptual site model, illustrating the relationship between hydrogeology, surface and subsurface features, and the generalized extent of contamination.

Are there groundwater COCs in excess of the critical PCLs beyond the TI Zone? **X** Yes ____ No

If yes, make sure removal/decontamination actions are documented in Worksheet 1.0.

Will actions be required or already completed to prevent COC migration outside the area of technical impracticability and/or outside the existing boundary of the groundwater PCLE zone?

____ Yes **X** No

The primary response action for the groundwater PCLE Zones outside of the proposed TI Zones is through Remedy Standard B using the PMZ and decontamination through MNA, as discussed in Worksheet 2.1.

If yes, make sure removal/decontamination actions are documented in Worksheet 1.0.

ATTACHMENT 2G

TECHNICAL IMPRACTICABILITY DEMONSTRATION

ATTACHMENT 2G – 1 TI FACTORS
ATTACHMENT 2G – 2 PROPOSED TI ZONE
ATTACHMENT 2G – 3 CONCEPTUAL SITE MODEL SW-NE
ATTACHMENT 2G – 4 CONCEPTUAL SITE MODEL S-N
ATTACHMENT 2G – APPENDIX 1 – GROUNDWATER FLOW MODEL RESULTS

ATTACHMENT 2G

TECHNICAL IMPRACTICABILITY DEMONSTRATION

UNION PACIFIC RAILROAD
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

DECEMBER 7, 2015 – REVISION 1

Prepared for:

Mr. Geoffrey Reeder, P.G.
UNION PACIFIC RAILROAD COMPANY

24125 Aldine Westfield Road
Spring, Texas 77373

Prepared by:

PASTOR, BEHLING & WHEELER, LLC

2201 Double Creek Drive, Suite 4004
Round Rock, Texas 78664
(512) 671-3434

TBPG Firm Registration No. 50248

PBW Project No. 1358

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 SITE GROUNDWATER CPCLS 3

3.0 SPATIAL AREA FOR TI 4

4.0 CONCEPTUAL SITE MODEL 4
4.1 Hydrogeologic Considerations - Site-Specific Geology/Hydrogeology 4
4.2 Contaminant Considerations 6
4.3 Receptors 10

5.0 EVALUATION OF RESTORATION POTENTIAL 10
5.1 Source Control 11
5.2 Remedial Action Performance 13
5.3 Restoration Timeframe Analysis 13
5.4 Alternative Cleanup Technologies 16

6.0 SIMILAR TI WAIVER SITES 18

7.0 REFERENCES 24

LIST OF PHOTOGRAPHS

Figure	Title
1	Example of Creosote DNAPL Saturation in A-TZ Well TW-56A

LIST OF FIGURES

Figure	Title
1	Factors Affecting Groundwater Restoration Potential
2	Proposed TI Zone
3	Conceptual Site Model – SW-NE
4	Conceptual Site Model – S-N

LIST OF APPENDICES

Appendix	Title
A	Groundwater Flow and Transport Model

1.0 INTRODUCTION

The Union Pacific Railroad (UPRR) former Houston Wood Preserving Works Facility (hereafter "HWPW" or "the Site") is a former wood treating site located in Houston, Texas. The Site consists of unoccupied industrial land and also includes the Englewood Intermodal Yard, which is to the south of the former HWPW facilities. The Site was first developed for creosoting operations in 1899, and operated various creosoting operations until 1984 when operations ceased. The facility was dismantled in the early 1990s. Details of the history and previous operations at the Site have been discussed in length in the previously submitted Affected Property Assessment Report (APAR) (ERM, 2000) and Revised APAR (ERM, 2004), as well as the RCRA Facility Assessment (RFA) Report (PRC, 1993).

As discussed in the previous APARs and in the Response Action Plan (RAP) that this attachment is part of, the shallow groundwater bearing units (GWBUs) at the Site have been contaminated with creosote-related dense non-aqueous phase liquids (DNAPL) and associated dissolved chemicals of concern (COCs). The sources of DNAPL are likely from spills and drippings at the Site over the 80+ years of operations, with most of the releases likely occurring prior to 1984 when the facility ceased operations. The DNAPL sources were removed over 20 years ago when the wood treating facility was dismantled.

Creosote DNAPL has been observed in the GWBUs as noted in soil borings and monitoring wells across the Site and in areas off site. As a result, the following shallow GWBUs are impacted with COC concentrations greater than Texas Risk Reduction Program (TRRP) critical Protective Concentration Levels (cPCLs) on and off site:

- A-Transmissive Zone (A-TZ);
- B-Cohesive Zone (B-CZ) and B-Transmissive Zone (B-TZ);
- C-Transmissive Zone (C-TZ).

Monitored natural attenuation (MNA) of the COCs in groundwater appears to be limiting the migration of the groundwater PCL Exceedance (PCLE) Zones; however, restoration of the groundwater within the PCLE Zones to cPCLs in a reasonable timeframe may not be practicable due to the presence of creosote DNAPL.

According to U.S. Environmental Protection Agency (EPA) "Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration" (Office of Solid Waste and Emergency Response

Directive 9234.2-25 (EPA, 1993), the goal of restoring contaminated groundwater within a reasonable time frame can be modified after an evaluation of technical impracticability. The EPA's technical impracticability guidance cites the following categories that can lead to a finding of technical impracticability:

1. Hydrogeologic factors
2. Contaminant factors
3. Remediation technology factors

Hydrogeological factors related to the Site include a complex lithology of sands, silts, and clays related to fluvial-deltaic depositional systems found in the Beaumont Formation. In regards to the contaminant at the Site, creosote was used as a wood preservative that served as a fungicide, insecticide, miticide, and sporicide (EPA Website: Preliminary Risk Assessment for Creosote, EPA, 2007). Creosote is a complex mixture of polycyclic aromatic hydrocarbons (PAHs), heterocyclic compounds, phenolic compounds, and a small fraction of benzene, toluene, ethylbenzene, and xylenes (BTEX) (Kiilerich, 1996). Creosote is highly insoluble and hydrophobic. As a result, creosote DNAPL may persist in "pools" in the GWBUs indefinitely. Even with more aggressive responses such as thermally enhanced treatment that has been tried at similar creosote sites, groundwater response alternatives will not effectively treat groundwater to cPCLs within a reasonable timeframe. Therefore, restoration of the GWBUs below cPCLs is technically impracticable where creosote DNAPL exists because it is a continuing, long-term source of groundwater contamination.

This document was prepared to serve as a "front-end" Technical Impracticability (TI) Demonstration for the Site in accordance with 30 TAC §350.33(f)(3) and applicable TCEQ guidance to address the PCLE Zones related to creosote DNAPL. Details of the cPCLs requested to be waived (Section 2.0), spatial area for the TI (Section 3.0), conceptual site model including site geology, hydrogeology, DNAPL distribution, and potential receptors (Section 4.0), and restoration potential (Section 5.0), are discussed in the following sections. In addition, an evaluation of similar creosote sites in Texas with TI waivers is provided in Section 6.0. Attachment 2G-Figure 1 summarizes the factors affecting groundwater restoration potential related to the Site. Attachment 2G Figure 2 shows the proposed TI Zone for the Site. Attachment 2G-Figure 2 and 3 provides a conceptual site model, illustrating the relationship between hydrogeology, surface and subsurface features, and the generalized extent of contamination.

2.0 SITE GROUNDWATER CPCLS

The following table lists the PCLs identified for the Site in the APAR and RAP. Since the groundwater PCLE Zones extend on-site and off-site, commercial/industrial (C/I) PCLs and residential assessment levels (RALs) are used respectively depending on the location of the PCLE Zone.

Parameter	**On-Site C/I PCLs** (mg/L)	**Off-Site RALs** (mg/L)
2,4-Dimethlyphenol	1.5	0.49
2-Methylnaphthalene	0.29	0.098
Acenaphthene	4.4	1.5
Benzo(a)anthracene	0.0028	0.0013
Benzene	0.005	0.005
Benzo(a)pyrene	0.0002	0.0002
bis(2-ethylhexyl)phthalate	0.006	0.006
Chrysene	0.28	0.13
Dibenzofuran	0.29	0.098
Fluoranthene	2.9	0.98
Fluorene	2.9	0.98
Naphthalene	1.5	0.49
Pentachlorophenol	0.001	0.001
Phenanthrene	2.2	0.73
Pyrene	2.2	0.73
Toluene	1	1

Based on the available information, all of the COCs listed above originated from the historical creosoting operations at the Site.

3.0 SPATIAL AREA FOR TI ZONE

As detailed in the EPA Guidance, the TI evaluation should specify the horizontal and vertical extent of the area for which the TI determination is sought. The location and extent of the groundwater PCLE zones (see Attachment 1A of RAP) were determined by COCs present in groundwater at concentrations that exceed the cPCL (C/I or RAL) using the most recent groundwater data. Groundwater PCLE Zones were mapped for the three upper GWBUs: A-TZ, B-CZ/B-TZ, and C-TZ based on the July/August 2014 groundwater data (Attachment 1A, Figures 5B-4, 5B-5, and 5B-6, respectively).

As detailed in the RAP (Worksheet 2.1), the PCLE Zones in the GWBUs appear to be tied closely to where DNAPL has been noted in soil borings and/or accumulated in monitoring wells. Taking in account the three GWBU PCLE Zones, the extent of the dissolved phase contamination extends about 750 feet north of the Site (B-CZ PCLE Zone) into the residential off-site properties (Attachment 1A, Figures 5B-5). DNAPL was noted in the boring log for well MW-63B, located approximately 500 feet off-site to the north. Also, on the west side of the Site, DNAPL has been observed in wells MW-12B and MW-41B, but the PCLE Zone is delineated within 100 feet of these wells. This same situation has been noted for the A-TZ and C-TZ where DNAPL has been observed in wells and soils borings within and at the edges of the PCLE Zone (i.e., MW-32AR for the A-TZ and MW-17C in the C-TZ (Attachment 1A, Figures 5B-4 and 5B-6, respectively)).

However, the spatial extent of the proposed TI Zone will include areas where DNAPL was either noted in the soil borings or detected in the monitoring wells, and extend vertically to the base of the C-TZ located approximately 65 to 70 feet below ground surface. The TI Zone will be a smaller area than the proposed overall PMZ. Since there are multiple off-site properties to the north and east, the proposed TI Zone will follow property boundaries instead of lines cutting across the properties (Attachment 2G, Figure 2).

4.0 CONCEPTUAL SITE MODEL

4.1 Hydrogeologic Considerations - Site-Specific Geology/Hydrogeology

The geology at the Site consists of interbedded clays, silts, and sands representative of fluvial-deltaic deposits of the Beaumont Formation. The site-specific geology and hydrogeology has been described in detail in the previous APAR (ERM, 2000), Revised APAR, (ERM, 2004), APAR Addendum (PBW, 2009) and Updated APAR Addendum (PBW, 2010). The Site stratigraphy from ground surface to a depth of about 135 feet below ground surface is grouped into nine distinct units with transmissive GWBUs separated by cohesive zones (with the GWBUs identified):

(1) Surface fill material (Fill);
(2) A-Cohesive Zone (A-CZ);
(3) A-Transmissive Zone (A-TZ) (GWBU);
(4) B-Cohesive Zone (B-CZ) (interbedded intervals);
(5) B-Transmissive Zone (B-TZ) (GWBU);
(6) C-Cohesive Zone (C-CZ);
(7) C-Transmissive Zone (C-TZ) (GWBU);
(8) D-Cohesive Zone (D-CZ); and
(9) D-Transmissive Zone (GWBU).

Cross sections showing the general relationship of the zones are provided on Attachment 2G Figures 3 and 4. The lithology consists of a complex group of clays, silts and sand layers. As an example, the B-CZ is comprised of clay, silty clay, and sandy clay. The B-TZ, which underlies the B-CZ, grades laterally from west to east into a portion of the B-CZ that contains interbedded, thin seams of silty sand, thin carbonate clayey gravel and nodule seams (~0.1 feet thick). This interval of interbedded carbonate nodules within the B-CZ clay is considered to be a distinct saturated unit based on its hydrologic properties and lithology. Very small amounts of water are observed in the wells completed across this interbedded zone, and numerous soil borings drilled through this interval have noted DNAPL is the soil borings.

General groundwater flow within the GWBU's have been evaluated based on historical water level measurements collected from the monitoring well network installed across the Site. Groundwater in each transmissive zone appears to be under confined conditions. Potentiometric maps for the most recent groundwater monitoring event for the A-TZ, B-CZ/B-TZ, C-TZ, and D-TZ are provided in Attachment 1A of the RAP. Historical groundwater levels measurements collected at the Site are provided in Table 5B in Appendix 2 of the RAP.

Hydraulic properties of the GWBUs through aquifer testing are detailed in the previous APARs. In 2012, additional aquifer tests were conducted on B-CZ wells to evaluate the groundwater classification of the interbedded carbonate seams within the B-CZ. Details of the aquifer testing are provided in RAP Attachment 1A. The additional assessment of the B-CZ was conducted since numerous wells screened across the interbedded carbonate seams contain creosote DNAPL. Based on the aquifer testing conducted on wells completed in the B-CZ (11 wells), the calculated hydraulic conductivities ranged from 8.0×10^{-9} cm/sec to 1.1×10^{-6} cm/sec, with a geometric mean of 1.1×10^{-7} cm/sec (see RAP Appendix 3) indicating very low hydraulic conductivity for the unit, and low likelihood of DNAPL recovery from the unit.

4.2 Contaminant Considerations

The Site was used for creosoting operations for about 80 years and ceased operation in 1984. Various releases of creosote occurred during this period. Creosote is hydrophobic, highly insoluble, and consists of a complex mixture of compounds, including PAHs and trace levels of BTEX. Only a few of the components of the creosote are soluble (i.e. aqueous concentration in equilibrium with creosote) including dibenzofuran (1.6 mg/L), naphthalene (12.4 mg/L), and phenol (1,388 mg/L) (King, et al, 1994). This overall low solubility for creosote results in limited groundwater COC concentration plumes that do not extend great distances from the source material. Studies have shown that the dissolved COC plumes from creosote sources tend to have concentrations three to 50 times lower about 150 feet downgradient of the source compared to source concentrations (Kiilerich, 1996). This relationship is observed at the Site with the limited size of the groundwater PCLE Zones relative to the extent of DNAPL (Attachment 1A – Figures 5B-1 to 5B-3) and age of the plumes likely anywhere from 30 to >100 years old.

Therefore, the groundwater PLCE Zones are driven by the presence of creosote in the GWBUs. During the various site investigations, creosote DNAPL has been noted in soil borings and monitoring wells completed in the A-TZ, B-CZ/B-TZ, and C-TZ. The cumulative areal extent of DNAPL noted in the boring logs is about 50 acres. Creosote recovered from monitoring wells at the Site is described as a thick, viscous liquid, with viscosity testing ranging from 8.53 centipoises (sample from MW-32A (DNAPL from the B-CZ zone)) to 192 centipoises (MW-12B) at 70ºF (PBW, 2009). Details of the occurrence and observations of DNAPL in each GWBU are provided in Attachment 1A of the RAP and are summarized below.

DNAPL in the A-TZ

During installation of monitoring wells in the A-TZ, DNAPL (free-phase or sheen) was observed in soil borings within the A-TZ GWBU in 12 wells generally located in the northeast portion of the Site (near SWMUs 4, 5, and 8, and off-site near the northern perimeter of the Site) and extending into the Englewood Intermodal Yard (Attachment 1A, Figure 5A-5). Of these 12 wells, monitoring wells MW-57A and MW-78A had measureable in-well DNAPL thicknesses of approximately 0.81 feet and 1.38 feet, respectively, during the July/August 2014 sampling event. However, evidence of DNAPL within the A-TZ extends out further than the area represented by these two wells, as shown in Attachment 1A, Figure 5A-5). The other 10 wells where DNAPL was noted in the boring logs have not had DNAPL observed in the wells.

As an example, monitoring well TW-56A (intended to be a test well) was installed in 2009 within one of the significant source areas at the Site, SWMU 8 – AST Area. The field geologist observed the lower portion of the A-TZ sand as being "*saturated with NAPL from 29.5 to 30.6'*." Photographs of this interval of the A-TZ show the saturated portion of the sand (see Photograph 1 within this attachment). However, through July 2014, no DNAPL has been observed in TW-56A. This phenomenon has been observed at numerous wells at the Site (MW-30A, MW-31A, MW-52A, MW-55A, MW-79A) where significant NAPL was noted in the boring log when the wells were installed, but no NAPL has been observed in the wells. This indicates that areas of the A-TZ may have residual saturation of DNAPL in the sand matrix that is not mobile, especially given the high viscosity of the DNAPL material. Even though there is little DNAPL migration, the NAPL continues to serve as a source of dissolved-phase COCs into the A-TZ.

In addition to the measured DNAPL thicknesses in the monitoring wells completed in the A-TZ, Attachment 1A Figure 5A-5 presents contours of rapid optical screening tool (ROST) readings from cone penetrometer test (CPT)/ROST borings that encountered the A-TZ. The majority of the elevated ROST readings (i.e., >25 % RE) in the A-TZ are located in and around the Recent Process Area, Original Process Area, and the AST Area (SWMUs 4, 5, and 8, respectively). The elevated ROST readings are generally consistent with intervals where NAPL was visually observed in soil borings for A-TZ wells, except for in the Englewood Intermodal Yard area. NAPL was noted on the boring logs for A-TZ wells MW-78A and MW-79A installed in the Englewood Intermodal Yard. However, there were no significant

ROST readings (i.e., >25% RE) in this area of the Site. This may indicate the NAPL may be more weathered in this area of the Site.

The groundwater PCLE Zone for the A-TZ generally matches the areas where DNAPL was observed in monitoring well borings logs. This is consistent with similar creosote sites where the dissolved COC fraction concentrations significantly decrease within 200 feet of the source material.

DNAPL in the B-CZ/B-TZ

DNAPL has been detected in the B-TZ along the western boundary of the Site at MW-12B and MW-41B (Attachment 1A, Figure 5A-6). During the July 2014 monitoring event, DNAPL present in the B-TZ on the west side of the Site had a maximum in-well thickness of 6.95 feet observed at MW-41B, with MW-12B having a measured thickness of 0.82 feet. Both of these wells are included in the DNAPL recovery pilot test and are pumped monthly since the test began in February 2013. DNAPL has not been detected in nearby monitoring wells MW-38B, MW-39B, MW-40B, TW-41B (located approximately 50 feet from MW-41B), and P-11, which indicates sufficient horizontal delineation of the DNAPL in the B-TZ. In addition, groundwater COC concentrations are less than cPCLs in the nearby wells within 100 feet of the DNAPL.

For the B-CZ wells, DNAPL was detected in three of the wells completed in the interbedded carbonate nodule seam interval, with two wells (MW-32B and MW-70B) located off site to the north of the Recent Process Area and one well in the Englewood Intermodal Yard (MW-75B). The in-well DNAPL thicknesses were measured at 2.11 feet in MW-32B, 0.94 feet in MW-70B, and 1.44 feet in MW-75B during the July 2014 gauging event.

Previously, DNAPL was noted in monitoring well MW-33B located north of the Site. Approximately 7.24 feet of DNAPL (in-well thickness) was observed at MW-33B in January 2010 (PBW, 2010). During the July 2010 monitoring event, an obstruction was encountered in the well that prevented access to the bottom of the well to gauge the DNAPL. The well was plugged and abandoned, and a replacement well MW-33BR was installed within about 10 feet of MW-33B in December 2011 (boring log provided in RAP Appendix 2). The boring log for MW-33BR noted traces of NAPL in fractures in the B-CZ. However, since the installation of MW-33BR, no DNAPL has been observed in the well.

ROST readings greater than 25% RE from CPT/ROST borings that encountered the B-TZ or B-CZ are also posted on Attachment 1A, Figure 5A-6, showing the overall distribution of ROST responses in the unit. The majority of the elevated ROST readings in the B-CZ/B-TZ are in the vicinity of SWMUs 4 and 5. However, elevated ROST readings were observed in the B-CZ north of the Site at CPT/ROST boring CPT-43R-08, near MW-70B. The ROST readings in this area are consistent with the observations of NAPL in monitoring well soil borings in the B-CZ (i.e., MW-70B). Elevated ROST readings were also noted in the Englewood Intermodal Yard area just slightly above the 25% RE (CPT-14-13). Monitoring wells MW-74B (installed within an area noted with >25% RE ROST readings) and MW-75B were installed in December 2011 in the Englewood Intermodal Yard to evaluate the presence of DNAPL in the B-CZ. NAPL was noted in the boring log in the B-CZ for both wells. However, no DNAPL has been detected in MW-74B during the gauging events. In contrast, no significant ROST readings were noted for CPT/ROST borings CPT-07-13 or CPT-10-13 (Figure 5A-6), but DNAPL has been observed in monitoring well MW-75B located in the immediate vicinity of CPT-07-13. As with the A-TZ, the NAPL in this area may be more weathered and less likely to be detected with the ROST tool.

Similar to the A-TZ, the groundwater PCLE Zone extends just beyond the areas where DNAPL was noted in the boring logs. As an example, the line of wells from the Site to the north off-site (MW-57B, MW-70B, MW-33BR, and MW-63B) all had NAPL noted in the boring logs within the B-CZ interbedded zone where the carbonate nodules were observed. COC concentrations in these wells are greater than their respective cPCLs. To the north of MW-63B at well MW-67B, COC concentrations are less than cPCLs and less than sample detection limits (SDLs) (Attachment 1A, Figure 5B-2).

DNAPL in C-TZ

During the July 2014 gauging event, DNAPL was present in the C-TZ wells extending from the northeast side of the Site at MW-23C to approximately 150 feet off site to the northeast near MW-44C, MW-45C, and MW-46C (Attachment 1A, Figure 5A-7). In-well DNAPL thicknesses in these wells were measured at 1.49 feet in MW-44C, 0.69 feet in MW-45C, 1.51 feet in MW-46C, and 2.14 feet in MW-23C.

As with the other transmissive zone NAPL figures, ROST readings from CPT/ROST borings that encountered the C-TZ unit were contoured and presented on Attachment 1A, Figure 5A-7 with the measured in-well DNAPL thicknesses for the C-TZ unit. Of the 100 CPT/ROST borings conducted at the

Site, only 13 CPT/ROST borings were advanced to the top of the C-TZ. The elevated ROST responses were relatively lower than the other GWBUs, and centered near SWMU 5 (Original Process Area).

4.3 Receptors

As discussed in the RAP, a Plume Management Zone (PMZ) and TI are proposed as a response action for the groundwater PCLE zones to ensure that COCs will not pose a potential hazard to human health or the environment as long as the PMZ attenuation action levels (AALs) are not exceeded at the respective attenuation monitoring points (AMPs) and COC concentrations less than cPCLs at the proposed Alternate POE wells. The PMZ/TI is appropriate for the PCLE zones based on a relatively low groundwater velocity, overall stable/declining COC concentrations, the proposed institutional controls (deed recordation and restrictive covenants) on use of groundwater within the PCLE Zone, and the absence of any existing water supply wells within ½-mile of the Site. In addition, there are no surface water bodies at the Site or near the proposed PMZ; therefore, there is no potential for contaminating surface waters that would be hydraulically connected to groundwater.

The City of Houston provides municipal water services for all properties within the Affected Property, so there is no human health complete pathway associated with the GWBUs. The Site is also within the jurisdiction of the Harris-Galveston Subsidence District (HGSD), which restricts groundwater use in the area and requires a permit application prior to drilling a groundwater well. There are permitting exemptions for small diameter wells, but only in areas that do not have an alternative water supply. The HGSD rules are not a complete prohibition on the use of groundwater in the area, but rather the fees associated with the rules are “intended to operate as an economic disincentive to groundwater withdrawal” (HGSD, 2013).

5.0 EVALUATION OF RESTORATION POTENTIAL

One of the major aspects of the TI demonstration in the EPA guidance is to evaluate the restoration potential through source control measures, remedial action performance, restoration timeframe analysis, applicable technologies, and cost estimate. With this demonstration considered a “front-end” TI demonstration, extensive site-specific remedial actions to address the groundwater PCLE Zones have not

been conducted. However, extensive site investigations have been conducted to understand the hydrogeologic and contaminant fate and transport at the Site, with emphasis on understanding the nature and extent of DNAPL at the Site.

5.1 Source Control

As previously discussed, the operations at the former HWPW ceased in 1984 and the facilities were dismantled and removed from the Site in the early 1990s. Therefore, there have been no new releases from creosote sources at the Site in the last 20 to 30 years. The DNAPL that has migrated to the GWBUs continues to act as a source material for dissolved-phase COCs in the groundwater. Evidence of the DNAPL migration extends across a majority of the area where the groundwater PCLE Zones have been identified.

Two major aspects, which are functions of the physical property of creosote and hydrogeologic complexity, greatly hinder recoverability of the DNAPL source from the subsurface. These include the following:

1. Residual saturation in the GWBU matrix and confining clays: As discussed in Section 4.0, a majority of monitoring wells where DNAPL was noted in the boring logs do not have measureable, or recoverable, DNAPL present in the wells. This indicates that in many areas within the Affected Property the creosote resides in the GWBUs as residual saturation and no longer flows under natural conditions; and
2. Creosote DNAPL in the low permeable clays: DNAPL noted in the boring logs for the B-CZ wells was typically observed within the B-CZ interbedded zone where the carbonate gravel seams were located. The hydraulic conductivities discussed in Section 2.0 for these B-CZ wells screened across the carbonate seams had a geometric mean of 1.1×10^{-7} cm/sec. Therefore, the ability to move fluids through the B-CZ is not practicable.

As an example of the difficulty of recovering DNAPL at the Site, wells MW-12B and MW-41B on the west side of the Site have had DNAPL in-well thicknesses as thick as 15 feet (MW-12B) and 22.8 feet (MW-41B). In 2009, monitoring well (test well) TW-41B was installed about 40 feet north of MW-41B between MW-41B and MW-12B to serve as a possible DNAPL recovery well given the relatively thick

DNAPL noted in the two nearby wells. The well was constructed to the same general elevations and screen interval as MW-41B (Attachment 1A, Figure 4C-3). However, no DNAPL has been detected in TW-41B, and groundwater samples from the well have been less than RALs.

At monitoring wells where DNAPL does flow into the wells, UPRR is conducting a DNAPL recoverability pilot study (discussed below). At these wells, DNAPL recovery will be evaluated for long-term source control of the creosote DNAPL in the three GWBUs.

To address the NAPL source control within the TI Zone for each of the GWBUs, the NAPL response action objectives and endpoints using TCEQ Guidance TRRP-32 (Risk-Based NAPL Management) will be addressed through control via TI based on the occurrence of DNAPL in wells at the Site. The control endpoint will be to control the source (i.e., soluble NAPL fraction) sufficient to create stable or shrinking PCLE zones. Methods to control the creosote DNAPL will include recovery (recover readily recoverable creosote DNAPL from wells with DNAPL present) at the NAPL source zone so that the dissolved-phase groundwater PCLE zone is stable (or shrinking) and the PCLE performance objectives for the TI-based PMZ can be met.

As previously discussed, the creosote DNAPL does not create large, extensive dissolved-phase plumes outside of where the creosote is found to be present in the subsurface. Studies have shown that the dissolved COC plumes from creosote sources tend to have concentrations three to 50 times lower about 150 feet downgradient of the source compared to source concentrations (Kiilerich, 1996). This is supported at the Site by the limited migration distance of the dissolved-phase plume from the source areas, indicating a primary line of evidence (PLOE) that natural attenuation is occurring to control the PCLE Zone. Furthermore, as detailed in RAP Worksheet 2.1, groundwater analytical data from the three upper GWBUs indicate the distribution of COCs dissolved in Site groundwater is relatively stable in the source areas, with a few exceptions (i.e., a few increasing trends but less than historical high concentrations). Therefore, as long as the DNAPL does not migrate outside of the TI Area, which will be controlled through recovery, groundwater concentrations will achieve critical PCLs at the alternate point of exposure (APOE) wells within the PMZ through decontamination techniques (i.e., natural attenuation) satisfying 30 TAC§350.33(f)(3)(B) and (C).

The proposed response action to address the surface soils is through a soil cap over approximately 13 acres including most of the potential source areas (i.e., SWMU 4, 5, and 8). Even though the soil cap will not be designed for hydraulic control (designed to protect human health exposure to surface soils), the construction of the soil cap will include a vapor barrier and will be slightly sloped and vegetated. Both of these design elements will likely limit infiltration through the former source areas and limit further migration from the vadose zone to the upper GWBUs.

5.2 Remedial Action Performance

PBW initiated a 24-month pilot study in February 2013 through January 2015 to evaluate DNAPL recovery by conducting tests on selected wells where DNAPL had been observed. Details of the scope of work for the pilot test were submitted to the TCEQ in a letter dated February 5, 2013 (PBW, 2013). A copy of the scope of work is provided in RAP Appendix 3.

Conclusions from the DNAPL recovery pilot test indicated the following:

- Once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested.
- The current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time.

As part of the corrective action for the Site, UPRR plans to continue the monthly DNAPL recovery efforts, and will submit the annual reports of recovery efforts to the TCEQ as part of the post-response action care reporting. More aggressive DNAPL recovery efforts are not recommended for the Site given the effectiveness of the monthly recovery activities.

5.3 Restoration Timeframe Analysis

The presence of NAPL across the Site within the GWBUs is the key factor in evaluating the timeframe to achieve the Site remedial goals. Creosote NAPL is present as both a residual phase adsorbed onto the soil and GWBU matrix and as free-phase within the GWBUs. DNAPL removal through the use of groundwater extraction wells is limited by the characteristics of the complex hydrogeology and the

physical properties of the creosote in the GWBUs. Creosote is a highly insoluble DNAPL that readily adsorbs onto the soil matrix. Groundwater tends to flow around these areas saturated with DNAPL because creosote is highly hydrophobic, and as a result only a small fraction of the total contained PAH mass is actually exposed to the groundwater.

As part of the evaluation of restoration timeframes, PBW reviewed groundwater models prepared for similar creosote sites, as well as developing a groundwater model specific to the HWPW site to evaluate the fate and transport of significant COCs associated with creosote DNAPL. One similar site is the North Cavalcade Superfund Site in Houston, Texas (as discussed in Section 6.0), which is located approximately 2 miles northwest of the UPRR HWPW site. As detailed in the document titled "*Subsurface Contaminant Transport Modeling for the North Cavalcade Superfund Site, Houston, Texas*" (Idaho National Laboratory, 2006), a groundwater modeling study was conducted for the North Cavalcade site to evaluate transport of the more soluble constituents found in creosote within the shallow groundwater. The groundwater model focused on benzene and naphthalene found in the creosote and in the dissolved-phase within the groundwater near the creosote. The modeling study evaluated two scenarios: 1) a no-action scenario; and 2) a scenario where reductions in the source area were modeled. The results of the modeling study indicated that the resulting naphthalene concentrations were "still above the health advisory level after 100 years" (Idaho National Laboratory, 2006).

PBW developed a similar groundwater model to evaluate the possible fate and transport of naphthalene from the creosote DNAPL present in the C-TZ unit. The C-TZ unit was selected based on the occurrence of creosote DNAPL in the unit, extensive groundwater data available for the unit, and relatively consistent groundwater flow direction and gradient. As with the North Cavalcade site, naphthalene is a significant COC associated with the creosote DNAPL at the Site. The computer program Visual MODFLOW version 4.6 (including the fate-and-transport module MT3DMS) was used to simulate naphthalene concentrations typically found in creosote mixtures, and the model results compared to groundwater concentrations found at the HWPW site in C-TZ wells with either creosote DNAPL or near known areas of creosote. Groundwater model assumptions and results are provided in Appendix A.

The objectives of the groundwater model were to:

- Prepare a groundwater flow simulation of the C-TZ that represents the general groundwater flow conditions and naphthalene concentrations currently found in the GWBU;

- Evaluate the potential migration and decrease of naphthalene concentrations in the C-TZ over time with source reduction by decreasing naphthalene concentrations at the areas where DNAPL is currently located (source areas). Naphthalene concentrations in the DNAPL source areas where DNAPL is currently found or suspected to be present were assumed to optimistically reduce by half every five years, with concentrations reduced below PCLs within 30 years (Year 2045); and
- Evaluate the potential downgradient migration of naphthalene concentrations in the C-TZ over time with a constant concentration of naphthalene in the source areas (as a result of a constant source of creosote DNAPL in the C-TZ where currently found) to compare to the previous scenario.

Given the widespread presence of DNAPL in the C-TZ at the Site, the assumption that naphthalene concentrations (sourced from the DNAPL) can be reduced to below PCLs within 30 years using a presumptive remedy (pump and treat) is optimistic and likely unrealistic based on remedial efforts at similar sites (see Section 6).

The groundwater modeling study (Appendix A) indicated the following based on the scenarios evaluated:

1. Under the modeled current conditions, the naphthalene plume in the C-TZ appears to have reached equilibrium based on the minimal dissolved phase migration from the source areas. Using the model with constant DNAPL source throughout the modeled period, there was little lateral migration of the naphthalene plume in the future (i.e., 100 years from present, in Year 2115, the downgradient edge of the naphthalene plume migrated approximately 250 feet from the current modeled edge).
2. The modeled results of naphthalene fate and transport using source reduction showed elevated naphthalene concentrations greater than 8 mg/L downgradient of the DNAPL source areas after 30 years (Year 2045), with concentrations greater than 3 mg/L (above the Residential PCL of 0.49 mg/L) after 100 years (Year 2115). It was not until the Year 2265 (250 years from present) that naphthalene concentrations decreased to below the Residential PCL.
3. The constant source and reduced source modeled naphthalene plumes showed similar downgradient plume geometries after 100 years with a slightly lower overall naphthalene concentration in the plume with the reduced source compared to the constant source (i.e., 3 mg/L compared to 10 mg/L).

The overarching conclusion of the groundwater model is that the reduction of naphthalene concentrations in the C-TZ groundwater to TRRP PCLs will not be met in a reasonable timeframe, and likely not within 250 years even with some source removal. It is important to note that the model does not take into account any back diffusion that could occur from the GWBU or surrounding clays even if the DNAPL could be removed. There will be significant amounts of contaminant mass that have diffused into low permeability zones, in particular the clays between the B-CZ/B-TZ and C-TZ. Back diffusion of contaminant mass from these zones may sustain dissolved-phase plumes for significant periods of time, even after DNAPL has been removed. As previously stated, complete removal of DNAPL from the GWBUs within a reasonable timeframe is not practicable; therefore, the more soluble COCs, such as naphthalene, will continue to partition into the groundwater and exceed the applicable PCLs.

With DNAPL present within the GWBUs, efficiency of any recovery system installed at the Site will be limited by the physical properties of the creosote as well as the slow rate of desorption of the creosote from the soil and GWBUs as a result of the low solubilities of the COCs in the DNAPL. Using a presumptive remedy such as traditional groundwater pumping and recovery system, large quantities of water would need to be pumped to remove a small fraction of the contaminants. Unless both the free-phase and residual DNAPL are completely removed from the soil and GWBUs material (as deep as approximately 68 feet in C-TZ), a groundwater extraction remedy will not be able to attain the remedial goals within the PCLE Zones in a reasonable time frame, as supported by the modeling results.

5.4 Alternative Cleanup Technologies

Aggressive cleanup technologies attempted at other creosote sites include thermal remediation or source area in-situ stabilization. Thermal remediation using steam enhanced extraction (SEE) has been used as an alternative cleanup technology for creosote DNAPL. Through heating of the GWBU and DNAPL, SEE has been shown to reduce the residual soil saturation and enhance the mobility of the creosote for recovery by conventional groundwater extraction wells. The variables that affect the success of SEE include the hydrogeology of the site and extent of NAPL to be treated. Subsurface conditions such as permeability, heterogeneities, water saturation, and depth to contamination greatly affect the effectiveness of SEE. The target GWBUs must have adequate permeability (i.e., 10^{-3} cm/sec) in order to conduct the

steam to heat the NAPL. GWBUs with low hydraulic conductivities would limit the radius of influence for the SEE system. The horizontal and vertical extent of the residual and free-phase DNAPL contamination is another major variable for evaluating SEE to address the creosote DNAPL. As previously discussed, the footprint of where DNAPL in each of the three GWBUs where DNAPL has been encountered extends over 50 acres and down to depths near 70 feet bgs. Based on a review of sites where SEE was used, the widespread contamination and multiple GWBUs at the Site would require numerous injection and extraction points to address the lower permeability sediments as well as prevent downward migration of the mobilized NAPL beyond the C-TZ.

Another limiting factor in applying the technology to this Site is the high capital cost involved for the installation of the systems. A review of available reports and studies on thermal remediation has shown that a limited number of sites have used SEE to address creosote impacted GWBUs. One site where SEE was applied was at the Visalia Pole Yard Superfund Site in California where creosote is a major contaminant at the site (US DOD, 2006). The SEE study was conducted at the Visalia site in 1997 through 2000 over a 1.75 acre area. Steam injection wells were installed at about 14 wells per acre and spaced about 57 feet apart. The cost estimates from the Visalia site indicated a unit cost of $197 per cubic yard of soil treated with an approximate total project cost of $21.5 million for the 1.75 acre area (US DOD, 2006). Applying the approximately $12 million per acre cost, the preliminary costs for the Site would be approximately $500 to $600 million to treat the 50 acre area.

Another alternative evaluated included in-situ solidification and stabilization (ISS/S). At similar sites, this approach has been used to “solidify” the DNAPL-impacted GWBU through binding the contaminated media with a reagent and thereby changing its physical properties (decreasing permeability and encapsulating the contaminants in a solid material). ISS/S usually consists of mixing a binding agent using large diameter augers to significantly reduce the hydraulic conductivity of the GWBU and bind the DNAPL contaminants to reduce their leachability. A similar approach is in-situ geochemical stabilization (ISGS) that consists of mixing a chemical reagent (i.e. permanganate-based reagent) to accelerate degradation of the DNAPL into the targeted area either through jet grouting or deep soil mixing using large diameter augers.

Both ISS/S and ISGS technologies were evaluated for a similar creosote site, the Cabot Carbon/Koppers Superfund Site in Gainesville, Florida (EPA, 20011a), to address creosote DNAPL in multiple GWBUs.

The Record of Decision (ROD) for the site detailed the ISS/S approach as a means to treat impacted soil from the ground surface to a middle aquifer (Upper Hawthorn Aquifer) approximately 65 feet bgs across 5.5 acres through deep soil mixing with a binding agent (cement/additives) (EPA, 2009). This depth is similar to the base of the C-TZ at the HWPW Site. The evaluation of the approach indicated that the remedy would take about 3 years to implement, with several more years to meet the groundwater protection standard at the site after implementing the remedy. The estimated capital costs for implementing the ISS/S listed in the ROD was $75.2 million (EPA, 2011a), which is approximately $13.7 million per acre treated. Applying this estimate per acre to just the C-TZ where the DNAPL footprint is approximately 2.5 acres, the costs would be roughly $34.3 million, with costs to treat the DNAPL in the B-CZ/B-TZ approaching $400 to $500 million (assuming the costs would be approximately 40% less with the shallower target zone compared to the C-TZ).

Since the shallow GWBUs are not used for water supply, and the area is provided water by the City of Houston, remediation of the shallow GWBUs is cost prohibitive. The cost for an alternative cleanup technology such as SEE or ISS/S is impracticable given the limited future beneficial use. In addition, implementation of these approaches would not be feasible in a residential area with numerous houses and city streets and utilities given the required well spacing or deep soil mixing borings needed to implement these remedies.

6.0 SIMILAR TI WAIVER SITES

PBW reviewed similar wood preserving sites where TI waivers have been granted for groundwater impacted with creosote. In EPA Region 6 alone, the following EPA Superfund sites that conducted wood preserving activities have been granted TI waivers (US EPA, 2012):

- Popile, Inc., El Dorado, Arkansas;
- Midland Products, Yell Co, Arkansas;
- Garland Creosoting, Longview, Texas;
- Hart Creosoting, Jasper, Texas;
- Jasper Creosoting, Jasper, Texas; and
- North Cavalcade, Houston, Texas.

A summary of the waivers are provided on Table 2G-1 of this attachment and the Texas sites that are listed are discussed below. In each case, the rationale for the TIs were that the waiver was necessary because the presence of PAHs in the dissolved phase groundwater plume and free-phase and residual DNAPL in the GWBUs make it technically impracticable to restore groundwater within a reasonable timeframe.

Garland Creosoting, Longview, Texas

The Garland Creosoting Superfund Site (CERCLIS ID TXD007330053) is located on 12 acres of land in Longview, Gregg County, Texas. Garland Creosoting began manufacturing creosote-treated wood products in 1960 and continued operations until declaring bankruptcy in February 1997. Creosote-contaminated groundwater was found during the investigation phase of the project. Creosote DNAPL was discovered in six of 16 monitoring wells during the investigation with DNAPL thickness ranging between 2 and 15 inches, and encompasses an area of about 1 acre (US EPA, 2006a). The TI waiver was detailed in the EPA Record of Decision (ROD) dated September 2006. Below are the key aspects of the TI waiver(US EPA, 2012).

- TI Decision: ARARs waived are MCLs for PCP and benzo(a)pyrene.
- Rationale: Based on monitoring data, DNAPL was found from 2 to 15 inches in thickness over 1 acre. However, assuming the DNAPL is 6 inches thick and the aquifer has an effective porosity of 25 percent, more than 35,700 gallons of DNAPL are present. DNAPL may not be adequately delineated and its movement in the subsurface is difficult to predict. Previous non-time critical removal actions included soil removal and interceptor trenches that collect and treat water and NAPL before it migrates off-site; these trenches continue to operate. It is believed the trenches will be required to operate indefinitely to contain the groundwater contamination.
- Conditions: NAPL (suspected or observed) – DNAPL is present.
- COCs – PCP and benzo(a)pyrene
- Concentration – Maximum concentrations in 2002 were 16.4 µg/L for pentachlorophenol and 10.8 µg/L for benzo(a)pyrene.
- Geology – Silt and fine-grained sand unit overlain and underlain by clay unit.
- TI Zone – The TI Zone encompasses the entire site and areas that are captured by the existing trenches. Vertically, the zone extends through the shallow water-bearing zone down to the clay layer.
- Evaluation: Remedial Timeframe Estimate (years) – Exceeds reasonable timeframe estimate for site conditions.
- Remedial Action Alternatives – Selected remedy consists of continued operation of the interceptor trench, installation of additional groundwater recovery wells, MNA, and ICs to restrict future use of the groundwater.

Hart Creosoting, Jasper, Texas

The Hart Creosoting Company (HCC) Site (CERCLIS ID TXD050299577) is a former wood treating facility located near Jasper, Texas. The HCC Site is approximately 23.4-acres in size located 1 mile south of downtown Jasper and lies predominantly within a wooded area with light industrial, commercial, and residential land use. Wood treatment operations using creosote began in 1958 and ended in May 1993. The major features of the Site are: the former process area, the waste water treatment areas, a temporary waste cell, and non-process areas. The Site is underlain by alluvium composed of varying proportions of clay, silt, and sand size material extending to depths up to 220 feet. The subsurface geology was grouped into three low-permeability and three permeable zones, with the low-permeability zones comprised primarily of silt to clay size material and the permeable units comprised primarily of sand sized material. The estimated area where free phase and residual NAPL may occur is 2 acres (US EPA, 2006b). The TI waiver was detailed in the EPA ROD dated September 2006. Below are the key aspects of the TI waiver (US EPA, 2012).

- TI Decision: MCLs are being waived for all contaminants; the prominent one is naphthalene (MCL–100 µg/L). Groundwater PRGs will also not be achieved. See Table 3 of the 2006 ROD for all PRGs.
- Rationale: A TI waiver is necessary because the presence of PAHs in the dissolved phase groundwater plume and free-phase and residual DNAPL in multi-lithology zones make it technically impracticable to restore groundwater within a reasonable timeframe.
- Conditions: NAPL (suspected or observed) – Free-phase and residual DNAPL has been observed.
- COCs – 12 PAHs, 4 SVOCs, and benzene
- Concentration – Naphthalene was detected between 0.11 and 15.2 mg/L in 1986.
- Geology – Multi-lithology zones
- TI Zone – TI Zone includes all portions of on-site groundwater where naphthalene exceeds the PRG and extends from 10 to 200 feet bgs (groundwater zones P-2 and P-4); however the lateral extent of the TI zone is undefined in the references reviewed.
- Evaluation: Remedial Timeframe Estimate (years) – Exceeds reasonable timeframe estimate for site conditions.
- Remedial Action Alternatives – The selected remedy includes a NAPL recovery system, treatment of surface water, excavation and on-site landfilling for site soils and sediments, a TI waiver, MNA, and ICs (land and groundwater use restrictions).

Jasper Creosoting, Jasper, Texas

The Jasper Creosoting Company (CERCLIS ID TXD008096240) operated a wood treating facility on an 11 acre site located near Jasper, Texas. From 1946 until 1992, the facility discharged wastewater from the wood treatment process directly into an off-site drainage ditch, contaminating the soil, sediment, and groundwater with semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol (PCP) and dioxins/furans.(US EPA, 2014) Free phase NAPL was observed at

two monitoring wells during the RI sampling event. The TI waiver was granted as detailed in the ROD dated September 2006 (US EPA, 2006c). Below are the key aspects of the TI waiver (US EPA, 2012).

- TI Decision: Maximum Contaminant Levels (MCLs) are being waived for all contaminants; the prominent one is naphthalene (MCL–100µg/L). Groundwater PRGs will also not be achieved. See Table 3 of 2006 ROD for all PRGs.
- Rationale: A TI waiver is necessary because the presence of PAHs in the dissolved phase groundwater plume and free-phase and residual DNAPL in multi-lithology zones make it technically impracticable to restore groundwater within a reasonable timeframe.
- Conditions: NAPL (suspected or observed) – Free-phase and residual DNAPL has been observed.
- COCs – PAHs
- Concentration – Maximum concentrations were 307,000 µg/L for total PAH and 105,000 µg/L for naphthalene in 2004.
- Geology – Multi-lithology zones
- TI Zone – TI Zone covers 12 acres and includes all portions of on-site and off-site groundwater where site COCs are above PRGs. Vertically, the zone includes groundwater zones P1 and P3 and extends to 150 feet bgs on-site and to 130 feet off site.
- Evaluation: Remedial Timeframe Estimate (years) – Exceeds reasonable timeframe estimate for site conditions.
- Remedial Action Alternatives – The selected remedy includes a NAPL recovery system, excavation and on-site landfilling for site soils, MNA for sediments and groundwater, a TI waiver, ICs, and P&T for containment (if necessary).

North Cavalcade, Houston, Texas

The North Cavalcade Street Superfund Site (CERCLIS ID TXD 980873343) is a 21-acre property and former wood treating site located in Houston, Harris County, Texas, about one mile southwest of the intersection of Loop 610 and U.S. Highway 59 (approximately 2 miles northwest of the UPRR Former HWPW). The Site is located within a commercial/industrial corridor, just north of the downtown Houston, with residential areas to the west (200 feet downgradient) and to the northeast. The wood treating facility was established in 1946 and continued in operation until 1961. The groundwater contaminant source areas are located on the southern 10-acre portion of the property. The two source areas include the former operation area and waste pits. The groundwater contamination in the lower interbedded dissolved phase plume extends offsite, with the groundwater contamination in the shallow sand is limited to onsite. Areas of residual DNAPL and isolated free-phase DNAPL have been encountered at the site. Natural attenuation of the groundwater contaminants and the lithologic characteristics of both shallow and interbedded water bearing zones limit expansion of the plume and provide containment of the dissolved contaminant plume. To address the DNAPL and associated COC

groundwater plume, the Technical Impracticability of Ground Water Restoration technical memorandum was prepared for the EPA dated July 6, 2011 (CH2MHill, 2011). The EPA concluded that it is technically impracticable to restore all parts of the dissolved phase groundwater because of the intermittent occurrence of residual and free-phase DNAPL in the shallow sand and interbedded unit water-bearing zones. In particular, the contaminant plume in the interbedded unit will not be responsive to existing treatment technologies (US EPA, 2011b). Below are the key aspects of the TI waiver (US EPA, 2012).

- TI Decision: ARARs waived are MCLs for benzene (5 µg/L) and benzo(a)pyrene (0.2 µg/L), and a state promulgated standard for naphthalene (1,500 µg/L onsite and 490 µg/L offsite) in the shallow sand and interbedded units.
- Rationale: Dissolved phase contamination exceeding these cleanup levels is limited to within 2 blocks west of the site despite wood treating operations ceasing at the site over 50 years ago. P&T was conducted for the shallow aquifer and removed an estimated 8,000 pounds of creosote from the shallow sand. Later investigation verified that contamination was also present in the underlying interbedded unit, a much siltier zone that was not conducive to the P&T remedy.

  TI of groundwater restoration is supported by the following: (1) the remaining residual and free-phase DNAPL, although limited in extent, will continue to act as a source for site-related contaminants in groundwater, essentially outpacing the natural degradation of these contaminants in the areas where DNAPL appears. In this case, natural attenuation serves as a process for plume stability and containment, rather than restoration; (2) the heterogeneity and lithologic complexity of the interbedded unit limits the effectiveness of treatment technologies for source material and contaminated groundwater. While the predominant clay and silt limit migration of contamination, material bound in the matrix will continue to serve as an active source of contamination through dissolution. However, it cannot be removed or treated effectively or sufficiently to eventually achieve cleanup levels throughout the contaminated area; (3) the occurrence of DNAPL accumulation is limited to 4 wells out of the 65-well network associated with the source areas. DNAPL accumulation will continue to be measured and recovered when observed; and (4) source treatment has already been implemented using P&T and in situ source stabilization (ISS). P&T was found to be ineffective for the interbedded unit where the majority of contamination is observed, and expansion of the implemented ISS remedy or application of other remedies is limited by site features (active commercial businesses onsite, active rail lines, and future above-ground construction extending a highway).
- Conditions: NAPL (suspected or observed) – Free-phase and residual DNAPL are present.
- COCs – Benzene, benzo(a)pyrene and naphthalene
- Concentration – Maximum concentrations in 2010 exceed 10,000 µg/L for naphthalene and 500 µg/L for benzene. Plume maps are provided in the Technical Memorandum.
- Geology – The site is underlain by two water-bearing zones (shallow sand and interbedded unit) located above a thick regional clay layer (approximately 100 feet thick), which serves as a barrier to downward groundwater flow. The shallow sand is mostly poorly graded sand or silt sand. The interbedded unit is comprised of various clays, silts, and sands.
- TI Zone –The TI zone applies to both the shallow sand and interbedded units. The TI zone covers approximately 16 acres and is defined by the extent of the naphthalene plume in the interbedded unit.

- Evaluation: Remedial Timeframe Estimate (years) – Not provided in documents reviewed.
- Remedial Action Alternatives – The 2011 ROD Amendment selected containment of the shallow sand and interbedded unit dissolved phase plumes, as restoration throughout the impacted groundwater would not be achievable in the presence of DNAPL. The decision established a 16-acre TI Zone, wherein cleanup levels would be waived for benzene, benzo(a)pyrene, and naphthalene. ICs will be established to restrict the installation of groundwater wells within this zone to prevent exposure to contaminants.

The rationale for the TIs previously listed were that the waiver was necessary because the presence of PAHs in the dissolved phase groundwater plume and free-phase and residual DNAPL in the GWBUs make it technically impracticable to restore groundwater within a reasonable timeframe. Each one of the sites has similar geologic settings as the Former HWPW Site, with intervals of sand, silts, and clays. Of particular note is the geology at North Cavalcade, which is approximately two miles northeast of the Site. The description and general elevation of the shallow sand interval at the North Cavalcade site closely matches the A-TZ at the Site, and the interbedded unit may also match the intervals noted in the B-CZ at the Site.

Creosote is the common contaminant at each of these sites where TI waivers were granted. Restoration of the GWBU is not practicable while creosote DNAPL persists in the subsurface because it is a continuing source of groundwater contamination. Creosote DNAPL is also difficult to remove because the thick, oily liquids have an affinity for the soil matrix leaving residual DNAPL that may persist in the GWBU matrix for long periods of time after treatment. Therefore, attempts to reduce the DNAPL in the GWBUs may reduce the overall volume of contamination in the groundwater, the success of removing all of the DNAPL to the point where groundwater will be restored to cPCLs within a reasonable timeframe is not likely.

7.0 REFERENCES

CH2MHill, 2011, Technical Impracticability of Ground Water Restoration technical memorandum, North Cavalcade Superfund Site, Houston, Texas, July 6.

ERM, 2000. *Affected Property Assessment Report (APAR)*, Houston Wood Preserving Works, Houston, Texas, June 10, 2000.

ERM, 2004. *Revised Affected Property Assessment Report (APAR)*, Houston Wood Preserving Works, Houston, Texas, June 10, 2004.

Kiilerich, O., Erik Arvin, 1996. Ground Water Contamination from Creosote Sites. NGWA Groundwater Monitoring and Remediation, Volume 16, Issue 1, pps 112-117, February

King, M.W.G., H. Malcolmson, J. Barker, 1994. Groundwater plume development from a complex organic mixture. In Proceedings: API/NGWA Conference – Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Houston, Texas, November 2-4, 1994

Idaho National Lab (INL), 2006. Subsurface Contaminant Transport Modeling for the North Cavalcade Superfund Site, Houston, Texas. December, prepared for EPA Region 6.

Pastor, Behling & Wheeler, LLC (PBW), 2010. *Affected Property Assessment Addendum, Wood Preserving Works, Houston, Texas*.

PRC Environmental Management, Inc. (PRC EMI, 1993). *RCRA Facility Assessment Report*, Southern Pacific Transportation Company, Houston, Texas, October 1993.

Texas Risk Reduction Program (TRRP), 2014. *Protective Concentration Levels*. September 2014.

US Department of Defense (DOD), 2006, Unified Facilities Criteria (UFC), Design: In Situ Thermal Remediation. UFC 3-280-05, July 31

U.S. Environmental Protection Agency (US EPA), 1993. *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*. Office of Solid Waste and Emergency Response Directive 9234.2-25. Interim Final. September 1993.

US EPA, 2001. Popile, Inc., Superfund Site, Technical Impracticability Determination, September 2001

US EPA., 2006a, Record of Decision, Garland Creosoting Site Longview, Gregg County, Texas, September.

US EPA., 2006b, Record of Decision, Hart Creosoting Company, Jasper, Jasper County,Texas, September.

US EPA. 2006c, Record of Decision, Jasper Creosoting Company, Jasper, Jasper County,Texas, September.

US EPA, 2011a, Record of Decision/Summary of Remedial Alternative Selection, Cabot Carbon/Koppers Superfund Site, Gainsville, Alachua County, Florida, EPA Region 4, February

US EPA, 2011b, Record of Decision Amendment, North Cavalcade Street Superfund Site, Houston, Texas, August

US EPA, 2012, Summary of Technical Impracticability Waivers at National Priorities List Sites, OSWER Directive, 9230.2-24, August

US EPA, 2014, Jasper Creosoting Company Fact Sheet, EPA Superfund Website: http://www.epa.gov/superfund/accomp/factsheets03/jasper.htm

PHOTOGRAPHS

ATTACHMENT 2G – PHOTOGRAPH 1
EXAMPLE OF CREOSOTE DNAPL SATURATION IN A-TZ WELL TW-56A
UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON TEXAS

Union Pacific Railroad — **Log of Boring: TW-56A**

UPRR Houston Wood Preserving Works
Houston, TX

PBW Project No. 1358

Completion Date:	1/23/09	Drilling Method:	Roto Sonic
Drilling Company:	WDC Exploration	Borehole Diameter (in.):	6
Driller:	William Bludworth	Total Depth (ft):	32.0
Driller's License:	4885	Northing:	728757.67
Field Supervisor:	Chris Moore	Easting:	3168069.59
Sampling Method:	4"x10' Barrel	Ground Elev. (ft AMSL):	49.1

Depth (ft)	Well Materials	PID (ppm-v)	Recovery (ft/ft)	USCS	Lithologic Description
0				FILL	(0 - 1.5) GRAVEL, fill.
				GC	(1.5 - 4.0) CLAYEY GRAVEL, GC, very dark gray, moist, hard, odor.
5		–	DO		(4.0 - 18.2) SANDY CLAY, CL, light greenish gray, moist, firm to hard, some orange staining, odor.
10		27.3	6.0/7.0	CL	
		82.9			
		92.9			
15		124			
		18.1			
20		18	10.0/10.0		(18.2 - 30.6) SAND, SP, light greenish gray, wet, soft, fine sand, odor, some NAPL staining from 27.5-28.7, clay lens from 28.7-29.5, saturated with NAPL from 29.5-30.6.
		276			
		18.6		SP	
25		10.6			
		68.4	7.0/7.0		
		232			
30		20.6		CH	(30.6 - 32.0) CLAY, CH, red, moist, hard, odor.

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes:
Top 8 feet drilled out (DO) with a hydrovac to clear for utilities.

Initial Fluid Level (2/05/08)
▼ Depth to water: 17.48 ft BTOC

Annular Materials
(0.0 - 17.0) Portland/Bentonite Grout
(17.0 - 19.0) Bentonite Chips
(19.0 - 31.0) 16/30 Silica Sand
(31.0 - 32.0) Hole cave-in

Well Materials
(+3 - 21.0) Casing, 4" FJT Stainless Steel
(31.0 - 31.0) Screen, 4" FJT Stainless Steel, 0.01 wire wrap

TOC Elevation (ft AMSL)
51.89

FIGURES

ATTACHMENT 2G-1
FACTORS AFFECTING GROUNDWATER RESTORATION
UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON, TEXAS

Site/Contaminant Characteristics		Generalized Remediation Difficulty Scale	
Site Use	**Nature of Release**	**Small Volume, Short Duration, Slug Release** → **Large Volume, Large Duration, Continual Release**	***Conditions at the Former HWPW Site***
Chemical Properties	Biotic/Aboitic Decay Potential	High → ***Low***	*Creosote has low decay potentail*
	Volatility	High → ***Low***	*Creosote is predominately PAHs, low volatility*
	Contaminant Retardation (Sorption) Potential	High → ***Low***	*High contaminant retardation, but large volumes to create DNAPL in GWBUs*
Contaminant Distribution	Contaminant Phase	Aqueous, Gaseous → Sorbed → LNAPLS → ***DNAPLS***	*Large amounts of DNAPL, in multiple GWBUs - A-TZ, B-CZ, B-TZ, & C-TZ.*
	Volume of Contaminated Media	Small → ***Large***	*DNAPL has been detected in soil borings and wells extending over a 50 acre area.*
	Contaminant Depth	Shallow → ***Deep***	*Creosote DNAPL is observed in the C-TZ, approx 68 feet bgs*
Hydrogeologic Characteristics			
Geology	Stratigraphy	Simple Geology, e.g., planar bedding strata → ***Complex Geology, e.g., interbedded and discontinuous***	*Complex lithology, sands, silts, clays, interbedded zones (B-CZ), find grained silty sand (A-TZ, C-TZ).*
	Texture of Unconsolidated Deposits	Sand → ***Clay***	*DNAPL has been observed in the sandy intervals, as well as within the clay and carbonate gravel seams within the B-CZ. C-TZ is characterized as a silty sand with high silt content*
	Degree of Heterogeneity	Homogenous e.g., well-sorted sand → ***Heterogeneous e.g., interbedded sand and silts, clays, fractured media, karst***	*Site geology is heterogeneous with multiple interbedded sand, silt and clay intervals. DNAPL has been noted in the A-CZ, A-TZ, B-CZ, B-TZ, C-CZ, and C-TZ(six cohesive and transmissive zones).*
Hydraulics/Flow	Hydraulic Conductivity of Aquifer	High (>10^{-2} cm/sec) → ***Low (<10^{-4} cm/sec)***	*Hydraulic conductivites range from 10^{-3} cm/s (A-TZ), 10-4 cm/sec (B-TZ), to 10^{-7} cm/sec (B-CZ).*
	Temporal Variation of Flow Regime	Little/None → High	*Portions of the A-TZ, B-CZ, and B-TZ have varioations in flow on the west side of the Site, with varible flow north of the Site in the B-CZ. C-TZ flow is relatively consistent over time, but in opposite diretion of A-TZ, B-CZ, and B-TZ*
	Vertical Flow	Little Component → ***Large Downward Flow***	*There is a large downward vertical gradient between A-TZ-B-CZ/B-TZ and C-TZ. In addition, with creosote DNAPL, the density difference also drives migration downward.*

Source: EPA, 1993 with minor modifications

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- NAPL Noted on Boring Log
- Proposed Monitoring Wel
- Proposed TI Zone

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).
4. **- Corrective Action observation well.

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST

OFF-SITE PMZ

OFF-SITE TI ZONE

ON-SITE PMZ (WEST)

HWPW

TI (WEST)

TI (MAIN)

ON-SITE PMZ (MAIN)

OFF-SITE TI ZONE - CITY OF HOUSTON ROW

Englewood Intermodal Yard

Lucille
Fontinot
Wipprecht
Solo
Kashmere
Wylie
Clementine
Liberty Road
Erastus
Lockwood
Harlem
Sudan

MW-27A
MW-27C
MW-65B
MW-65D**
PMW-84B
MW-28C
MW-28A
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-68B
MW-26A
MW-33BR
MW-36B
MW-36D**
MW-36A
MW-44A
MW-45C (DNAPL)
MW-46C (DNAPL)
MW-25C
MW-25A
MW-54C
MW-66D**
PMW-82B
MW-35B
MW-35A
MW-33A
MW-34CR
MW-71B
MW-44C (DNAPL)
MW-32AR
MW-32B (DNAPL)
MW-70B (DNAPL)
MW-57A
MW-58A
MW-18AR
MW-60A
MW-57B
MW-72B
MW-18C
MW-18A
MW-47C
MW-13
MW-15C
MW-17
MW-17C
MW-30A
MW-23C
MW-52A
TW-56A
MW-14
MW-15A
MW-15B
MW-20A
MW-31A
MW-19C
MW-55B
MW-55A
MW-73B
MW-74B
MW-49B
MW-48C
MW-16
MW-49A
MW-79A
MW-61A
MW-39B
MW-38A
MW-12A
MW-12C
MW-40B
MW-38B
MW-12B (DNAPL)
MW-42B
TW-41B
MW-62B
MW-41B (DNAPL)
P-11
MW-02
MW-01A
MW-03
MW-10A
MW-08
P-12
MW-09
MW-22A
MW-10B
MW-22B
MW-11B
MW-11A
P-10
MW-04
MW-07
MW-21C
MW-05
MW-64A
MW-59A
MW-59B
MW-59D**
MW-69A
MW-75B (DNAPL)
MW-78A (DNAPL)
MW-80B
MW-77A
MW-76C
MW-50A
MW-81B
MW-51A
MW-51C

UNION PACIFIC RAILROAD CO.

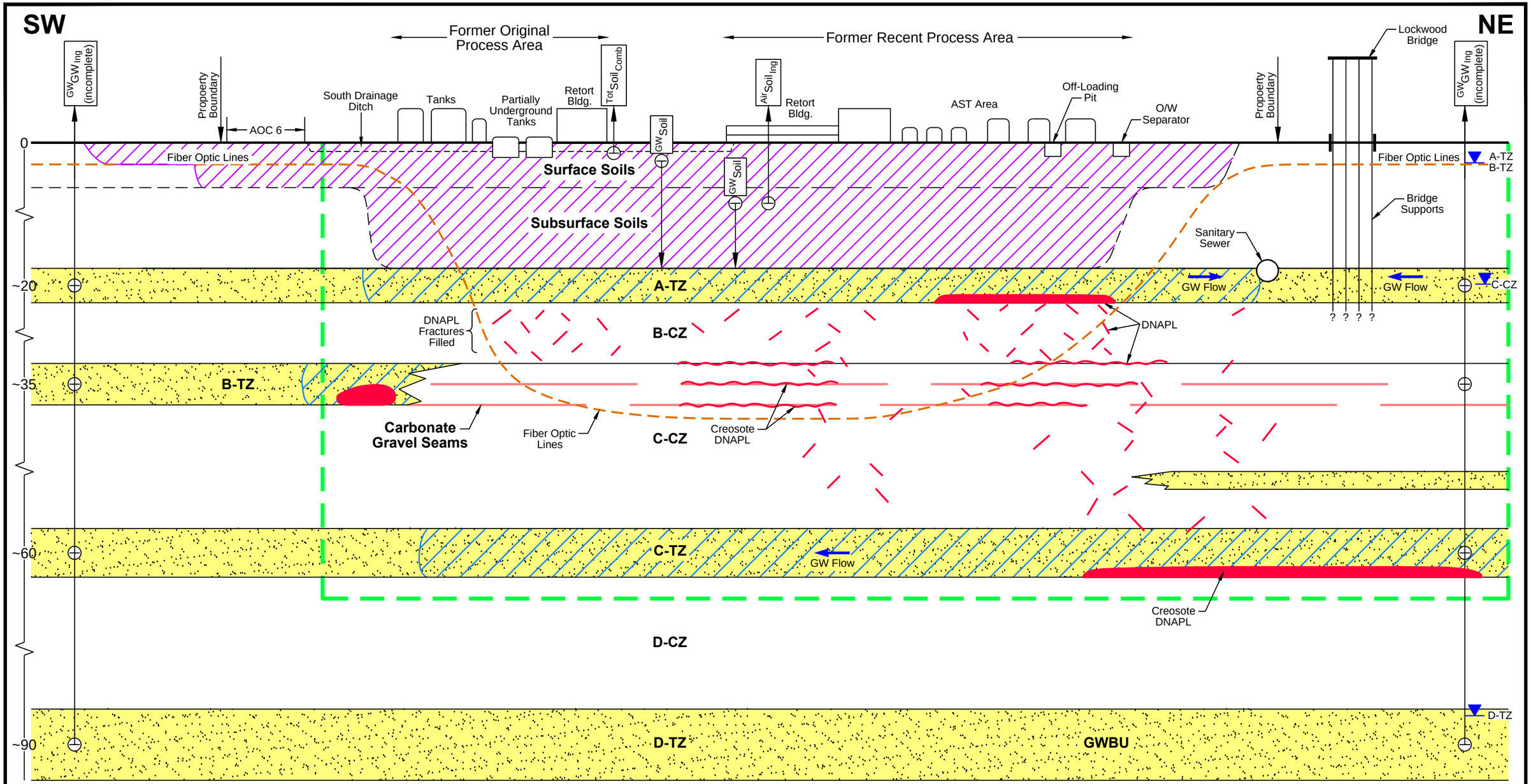
HOUSTON WOOD PRESERVING WORKS

Attachment 2G-2

PROPOSED TI ZONE

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2G-3

CONCEPTUAL SITE MODEL
SW - NE

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

S

N

Englewood Intermodel Yard

Former HWPW

Off-Site Residents

Propoerty Boundary

$^{GW}GW_{Ing}$ (incomplete)

Asphalt

~20-inch Concrete

Former Tank Farm

Ballast

Rail

$^{Air}Soil_{Ing}$

Retort Bldg.

$^{GW}Soil$

AST Area

$^{Tot}Soil_{Comb}$

Propoerty Boundary

Liberty Road

$^{GW}GW_{Ing}$ (incomplete)

0

~20

~35

~60

~90

Surface Soils

Subsurface Soils

A-TZ

B-CZ

C-CZ

C-TZ

D-CZ

D-TZ

GWBU

A-TZ

B-TZ

C-CZ

D-TZ

Surface Soils (Off-Site)

DNAPL Fractures Filled

Carbonate Gravel Seams

Creosote DNAPL

Soil Affected Property

Groundwater Affected Property

TI Zone

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 2G-4

CONCEPTUAL SITE MODEL
S - N

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

APPENDICES

APPENDIX A – GROUNDWATER FLOW AND TRANPORT MODEL

Computer Simulations of COC Fate and Transport

The computer program Visual MODFLOW version 4.6 (including the fate-and-transport module MT3DMS) was used to evaluate potential migration of components of creosote in the C-TZ groundwater bearing unit (GWBU) over time. The intent of the modeling study was to simulate current conditions and predictive simulations to evaluate potential migration of the creosote-impacted groundwater plume. The MODFLOW computer program is one of the most widely accepted codes for the three-dimensional simulation of fluid and solute transport. The program was also selected over more simplistic analytical models, such as Domenico's Model or BIOSCREEN, because it allows more flexibility in simulating the Site history and fate-and-transport processes.

Groundwater models are mathematical simplifications of complex hydrogeological systems. Such models are useful in identifying the most important components of flow systems and simulating the transport process. For this task, computer simulations were conducted to predict the extent of naphthalene migration for an arbitrary period of 100 years into the future from the areas where creosote dense non-aqueous phase liquids (DNAPL) has been detected or observed in the C-TZ. The following sections briefly describe the procedures, rationale, and results related to the transport model simulations. In general, the following steps were conducted:

- Developed a conceptual flow model of groundwater and contaminant transport for the C-TZ;
- Created the MODFLOW numerical flow model using site-specific information on the lithology, groundwater flow conditions, and contaminant distribution;
- Calibrated the flow model using Site data from the C-TZ and adjusting the constant head boundaries to approximate simulated conditions to observed conditions;
- Developed the transport model using the MT3DMS module within MODFLOW using site specific data (i.e. areas where DNAPL has been observed) with estimated source concentrations for naphthalene, as well as using partitioning coefficients and first-order decay rates for the C-TZ based on literature review and similar sites;
- Ran the transport simulation under two scenarios:
    - Modeled potential source reduction by decreasing naphthalene concentrations at the areas where DNAPL is currently located (source areas). The reduction of naphthalene concentrations in the DNAPL source areas was assumed to optimistically reduce by half every five years, with concentrations reduced below the PCL within 30 years (Year 2045)) within the areas where DNAPL is currently found or suspected to be present; and
    - Modeled a constant concentration of naphthalene in the source areas (assumes a constant source of creosote DNAPL in the C-TZ where currently found) to compare to the previous scenario.

- Conducted a sensitivity analysis.

Boundary Conditions and Grid Dimensions

A single layer, three-dimensional flow model was developed for the simulations. The model consists of 100 rows and 100 columns with the model domain 4,200 feet by 3,400 feet encompassing the Site. The model was developed at a sufficiently small nodal spacing to minimize the potential affects of numerical errors resulting from "numerical dispersion". The columns are evenly spaced at a constant width of 42 feet per column. The rows are arbitrarily set at a constant width of 34 feet. The layer thickness (i.e., the thickness of the C-TZ) was developed based on boring logs and cone-penetrometer testing (CPT) borings that extended through the C-TZ into the underlying clay unit. The average thickness of the C-TZ is approximately 9.6 feet, with the base of the C-TZ ranging in elevation from –26.7 feet mean sea level (MSL) to -21.4 feet MSL. Details of the hydrogeology of the Site were provided in the Affected Property Assess Reports (APARs). Constant head boundaries for the C-TZ were established on the north and east boundary of the model domain ranging in groundwater elevation from 29 to 30 feet MSL, with a constant head boundary in the southwestern portion of the model at 25 feet MSL (Figure 1). Groundwater potentiometric elevations from the July 2014 groundwater gauging event were used to establish the initial heads within the C-TZ.

Input Parameters and Calibration

Model calibration consisted of varying the key input parameters, within a reasonable range, until simulated water elevations and historical COC concentrations matched those observed at the Site. Experience and previous studies (Freyberg, 1988) have shown that models that are rigidly calibrated can lead to less accurate results than models that are reasonably calibrated using realistic input values. Since the model was developed for the C-TZ, no recharge was included in the model. The hydraulic conductivity for the silty sand layer was assumed to be 1×10^{-3} cm/sec. Using the groundwater potentiometric surface gradient with the hydraulic conductivity, the Darcy velocity was calculated to be around 7 to 9 feet per year.

For developing the target creosote DNAPL constituent to model in the C-TZ, the more soluble fractions were evaluated. Creosote is hydrophobic, highly insoluble, and consists of a complex mixture of compounds, including polycyclic aromatic hydrocarbons (PAHs) and trace levels of volatile organics (i.e.,

benzene and toluene). Only a few of the components of the creosote are soluble (i.e. aqueous concentration in equilibrium with creosote) including dibenzofuran, naphthalene, and phenol (King, et al, 1994). Since naphthalene is commonly found in the Site groundwater in the upper three GWBUs, naphthalene was selected for the transport model. The solubility of liquid naphthalene is 111 mg/L (CICAD 62, 2004). With creosote typically containing 11% naphthalene (Cohen, 1993), the mole fraction of naphthalene in creosote indicates an effective solubility of 16 to 18 mg/L and effective solubility range of 14 to 19 mg/L (CICAD 62, 2004). Therefore, for the areas where DNAPL has been observed in the C-TZ, a maximum naphthalene concentration of 19 mg/L was used in the transport model.

The objective of model calibration was to match model-predicted concentrations with naphthalene concentrations observed in Site monitoring wells. The calibration process consisted of numerous iterations in which key input parameters such as distribution coefficients and first-order decay rates were varied. A set of conservative assumptions were developed and included:

1. Creosote DNAPL entered the C-TZ in 1960. This assumes that spills of creosote began in the 1950s (after the start of the Recent Process Area (began operations in 1952)) and after 8 years migrated to the C-TZ.
2. The current hydraulic gradient and naphthalene concentrations observed across the Site in the C-TZ is similar to recent historical Site conditions; and
3. Cells in the model were assigned the maximum naphthalene concentration matching generally where DNAPL has been observed or interpreted to potentially be present. Naphthalene concentrations were then modeled under two scenarios:
    a. As a constant source concentration throughout the entire simulation period (+155 years); and
    b. Naphthalene concentration in the source areas reduced by half every 5 years until the concentrations in the source areas were below the PCL (at 30 years).

A reasonable match was achieved between simulated and observed naphthalene concentrations for the C-TZ model using realistic input parameters (Figure 2). The adsorption coefficient (Kd) and first-order decay rate used in the simulation was based on partition coefficients developed at the nearby North Cavalcade Superfund Site (Idaho National Laboratory, 2006). Table 1 shows the physical parameters used in the calibrated model. Table 2 shows chemical and other variables used in the "best-fit" transient fate-and-transport simulations.

Modeling Procedures and Results

Steady state groundwater flow conditions were first established using the boundary conditions shown on Figure 1, resulting in a hydraulic gradient that is similar to that observed during the July 2014 monitoring event. The simulated head data was compared to the observed head data for the C-TZ in July 2014. Of the 20 wells used for calibration, 4 of the wells were removed from the calculated versus observed head evaluation because of lower than normal elevations in those wells. With the other 16 wells, the correlation coefficient was 0.895 between calculated and simulated heads (Figure 3).

Using the best-fit input parameters described in the previous section, the model was then run in transient mode for a period of 55 years to simulate the migration of naphthalene between 1960 and 2014. A predictive transient run was then run for a period of 100 years (i.e., 2015 –2115), with one model run to year 2265 (250 years from present).

The results of the transient model indicated the following based on the scenarios evaluated:

- Under the modeled current conditions, the naphthalene plume in the C-TZ appears to have reached equilibrium based on the minimal dissolved migration from the source areas (Figure 4). Using the model with constant DNAPL source throughout the modeled period, there was little lateral migration of the naphthalene plume in the future (i.e., 100 years from present in Year 2115 the downgradient edge of the naphthalene plume migrated approximately 250 feet southwest of the current modeled edge) (Figure 5).
- The modeled results of the naphthalene using source reduction showed elevated naphthalene concentrations greater than 8 mg/L downgradient of the DNAPL source areas after 30 years (Year 2045) (Figure 6), with concentrations greater than 3 mg/L (above the Residential PCL of 0.49 mg/L) after 100 years (Year 2115) (Figure 7). It was not until the Year 2265 (250 years from present) that naphthalene concentrations decreased to below the Residential PCL.
- Comparing the constant source and reduced source modeled naphthalene plumes showed similar downgradient plume geometries after 100 years with a slightly lower overall naphthalene concentration in the plume with the reduced source compared to the constant source (i.e., 3 mg/L on Figure 7 compared to 10 mg/L on Figure 5).

Sensitivity Analyses

A sensitivity analysis was conducted to evaluate the sensitivity of the model results when changing key input parameters one at a time. The sensitivity analysis was run on the time period 1953-2014 so results

could be compared to currently observed PCLE zone conditions. The model is most sensitive to changes in Kd values. Raising or lowering Kd values by an order of magnitude leads to an unreasonable PCLE zone shape. The model is also sensitive to first-order decay rate changes.

References

CICAD 62 (Concise International Chemical Assessment Document 62), 2004, (http://www.inchem.org/documents/cicads/cicads/cicad62.htm)

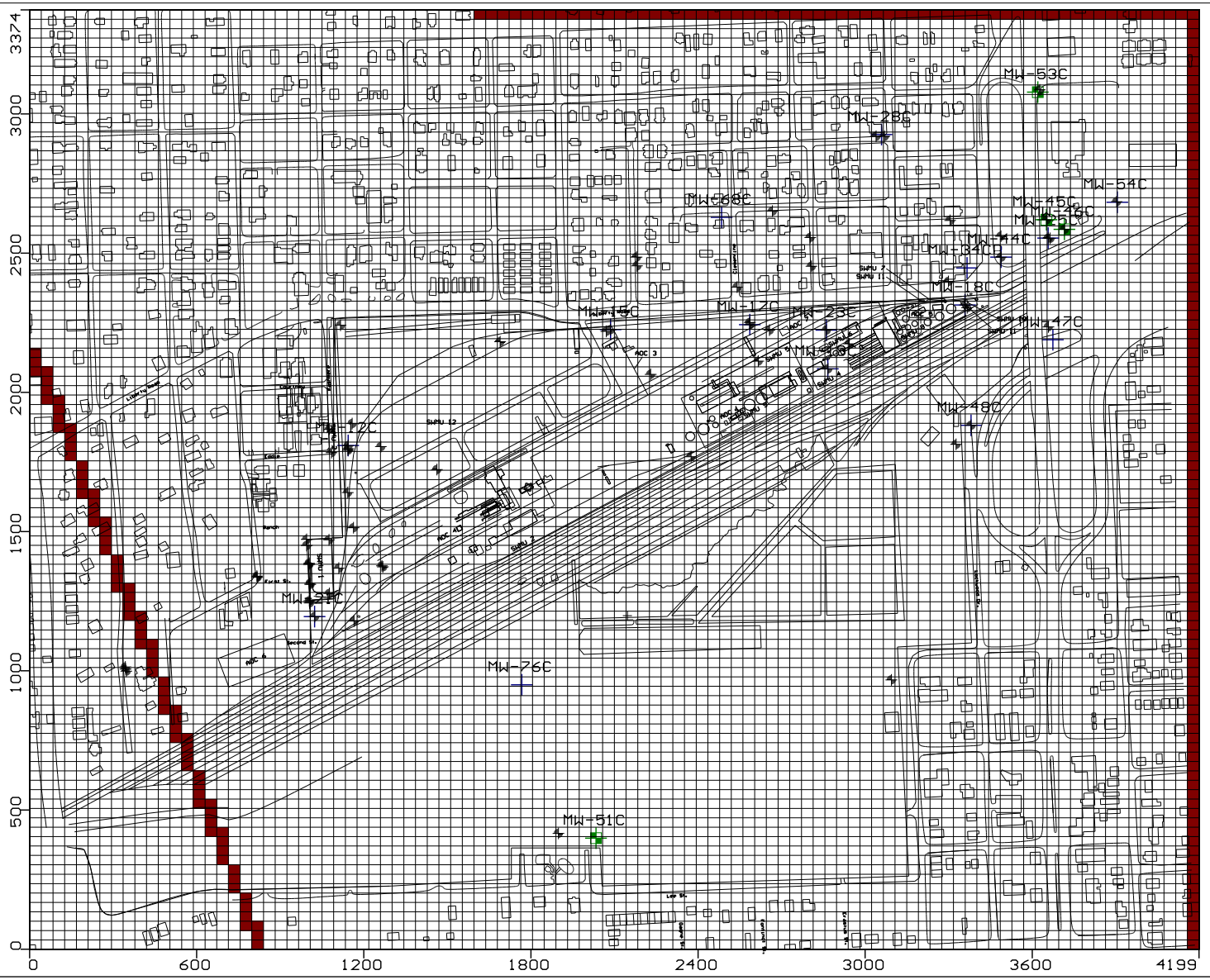
Cohen, R.M., J.W. Mercer, and J. Mathews, 1993, DNAPL Site Evaluation, C.K. Smoley, CRC Press, Inc., 2000 Corporate Blvd., N.W., Boca Raton, FL.

King, M.W.G., H. Malcolmson, J. Barker, 1994. Groundwater plume development from a complex organic mixture. In Proceedings: API/NGWA Conference – Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Houston, Texas, November 2-4, 1994

Idaho National Lab (INL), 2006. Subsurface Contaminant Transport Modeling for the North Cavalcade Superfund Site, Houston, Texas. December, prepared for EPA Region 6.

Pastor, Behling & Wheeler, LLC (PBW), 2010. *Affected Property Assessment Addendum, Wood Preserving Works, Houston, Texas*.

Figure 1 - Model Grid and Constant Head Boundaries



UPRR Houston Wood Preserving Works, Houston, Texas

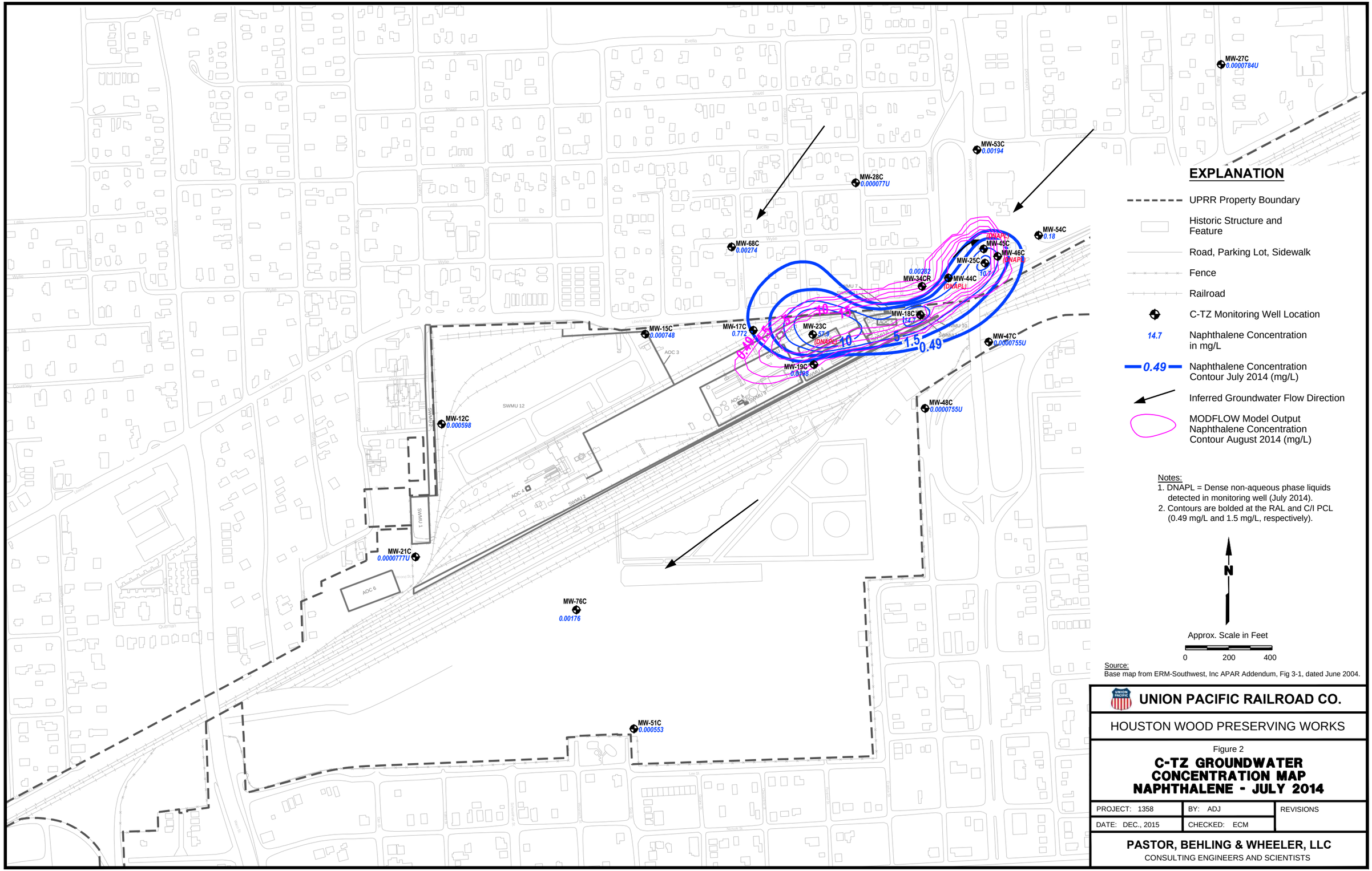
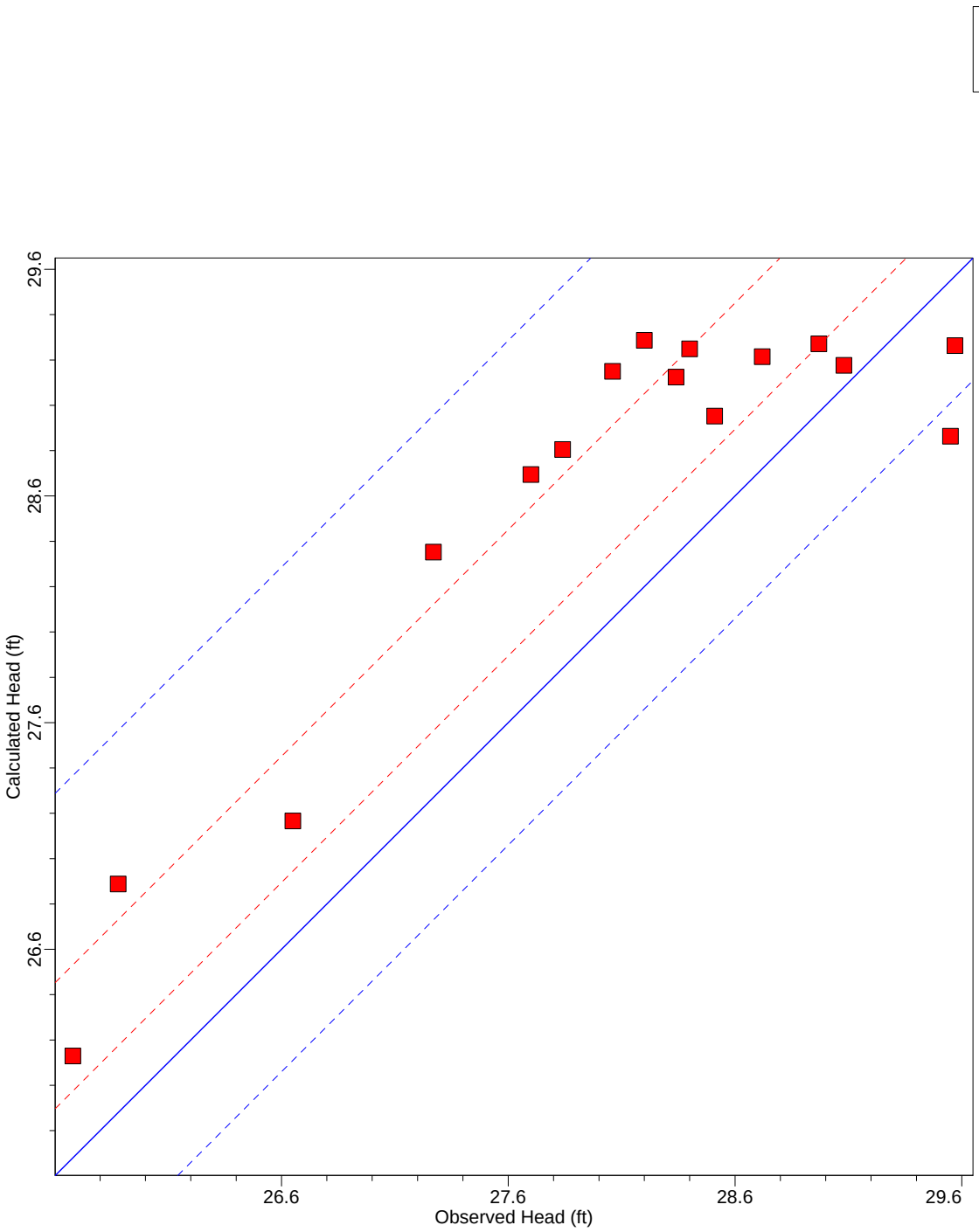

MW-27C
0.0000784U
MW-53C
0.00194
MW-28C
0.000077U
MW-68C
0.00274
MW-54C
0.18
MW-45C
(DNAPL)
MW-46C
(DNAPL)
MW-25C
10.7
MW-34CR
0.00282
MW-44C
(DNAPL)
MW-18C
14.7
MW-17C
0.772
MW-23C
57.9
(DNAPL)
MW-15C
0.000748
MW-19C
0.0196
MW-47C
0.0000755U
MW-48C
0.0000755U
MW-12C
0.000598
MW-21C
0.0000777U
MW-76C
0.00176
MW-51C
0.000553
AOC 3
AOC 4
AOC 5
AOC 6
SWMU 1
SWMU 2
SWMU 7
SWMU 9
SWMU 10
SWMU 12
0.49
1.5
5
10
15
EXPLANATION
UPRR Property Boundary
Historic Structure and Feature
Road, Parking Lot, Sidewalk
Fence
Railroad
C-TZ Monitoring Well Location
14.7
Naphthalene Concentration in mg/L
0.49
Naphthalene Concentration Contour July 2014 (mg/L)
Inferred Groundwater Flow Direction
MODFLOW Model Output Naphthalene Concentration Contour August 2014 (mg/L)
Notes:
1. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
2. Contours are bolded at the RAL and C/I PCL (0.49 mg/L and 1.5 mg/L, respectively).
N
Approx. Scale in Feet
0
200
400
Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.
UNION PACIFIC RAILROAD CO.
HOUSTON WOOD PRESERVING WORKS
Figure 2
C-TZ GROUNDWATER CONCENTRATION MAP NAPHTHALENE - JULY 2014
PROJECT: 1358
BY: ADJ
REVISIONS
DATE: DEC., 2015
CHECKED: ECM
PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Figure 3 - Calculated vs. Observed Head : Steady state

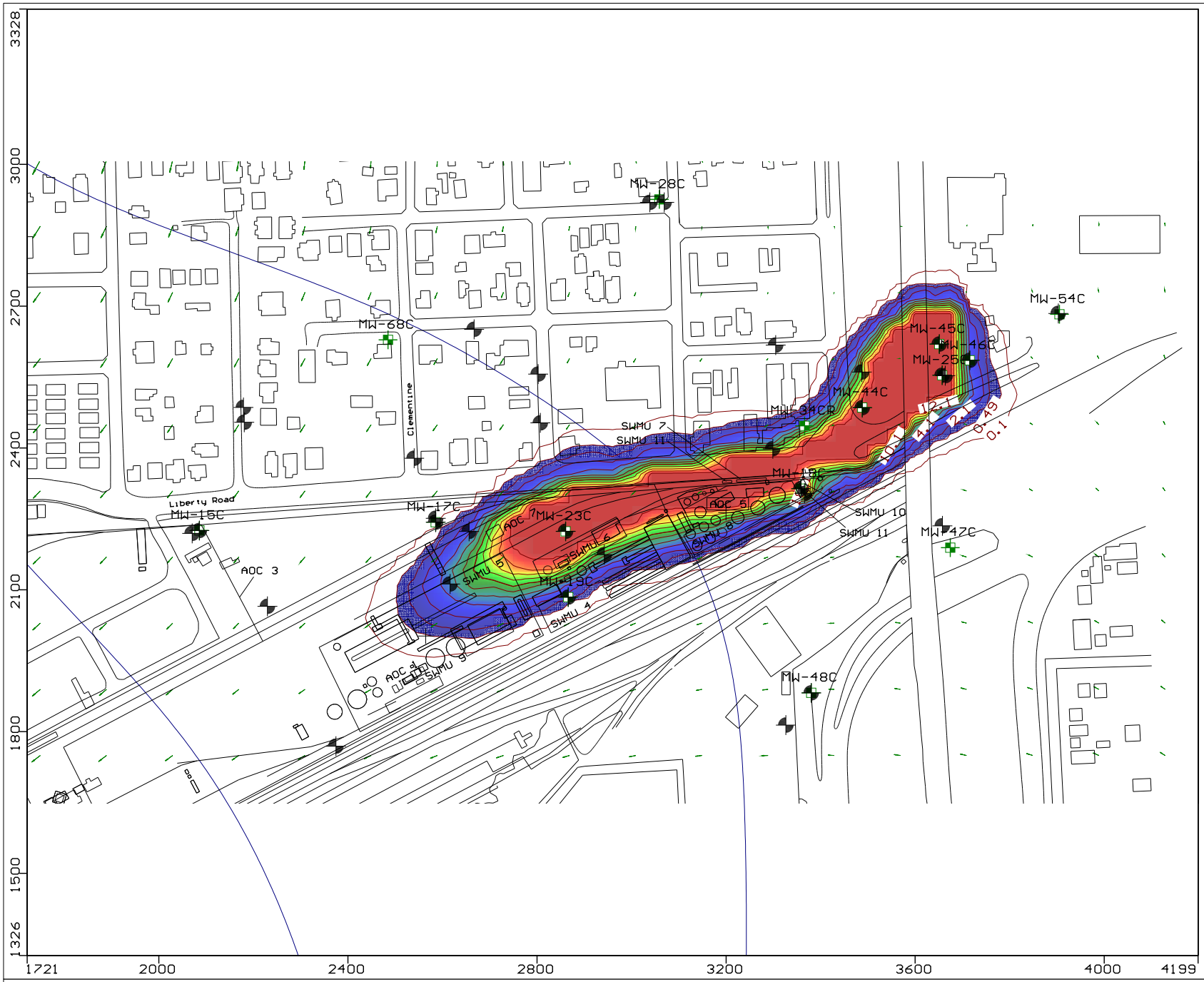


Max. Residual: 1.09 (ft) at MW-18C/CTZ
Min. Residual: 0.097 (ft) at MW-34CR/CTZ
Residual Mean : 0.573 (ft)
Abs. Residual Mean : 0.697 (ft)

Num. of Data Points : 16
Standard Error of the Estimate : 0.131 (ft)
Root Mean Squared : 0.766 (ft)
Normalized RMS : 19.691 (%)
Correlation Coefficient : 0.895

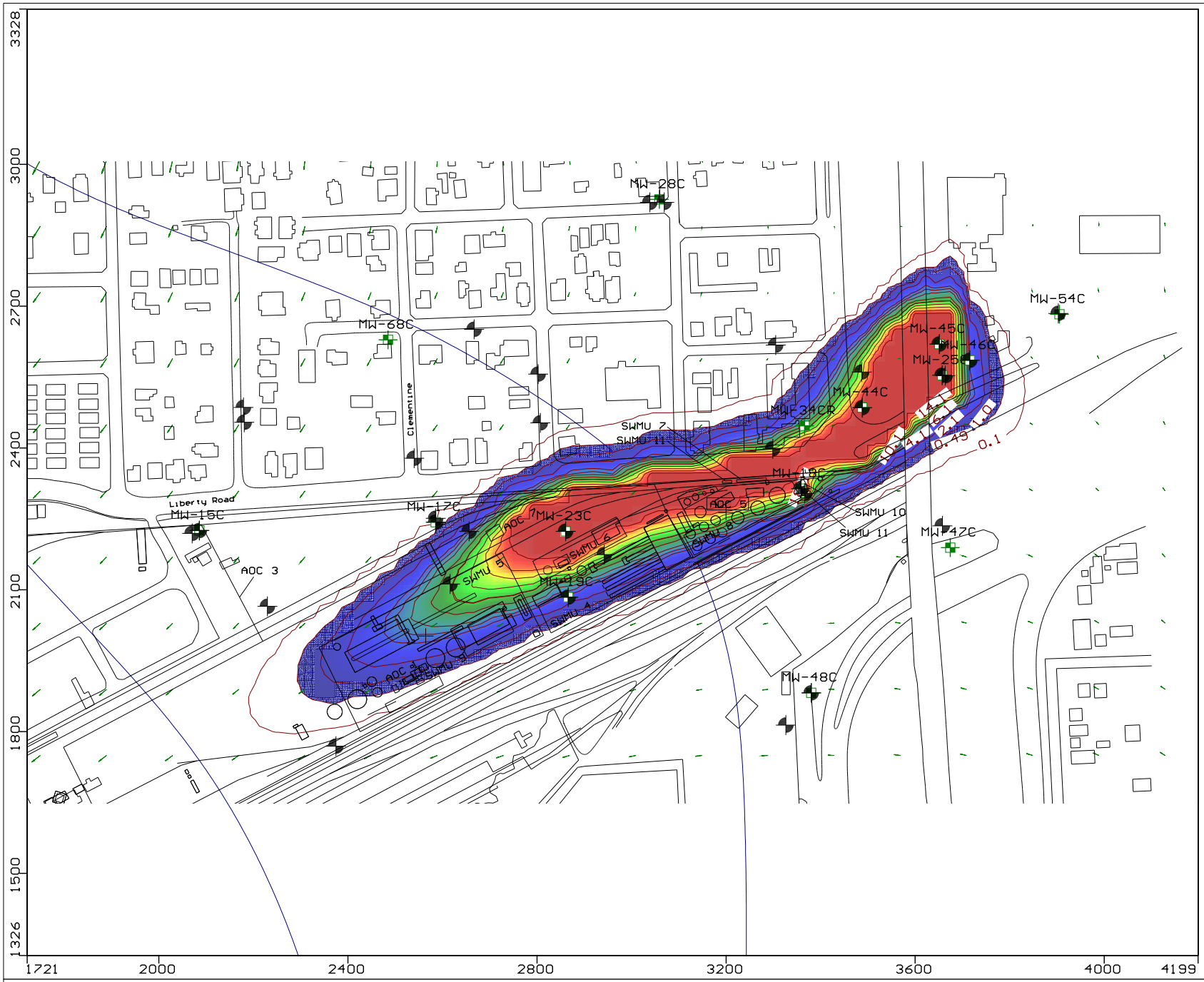
UPRR Houston Wood Preserving Works

Figure 4 - Simulated Naphthalene Concentrations - August 2014



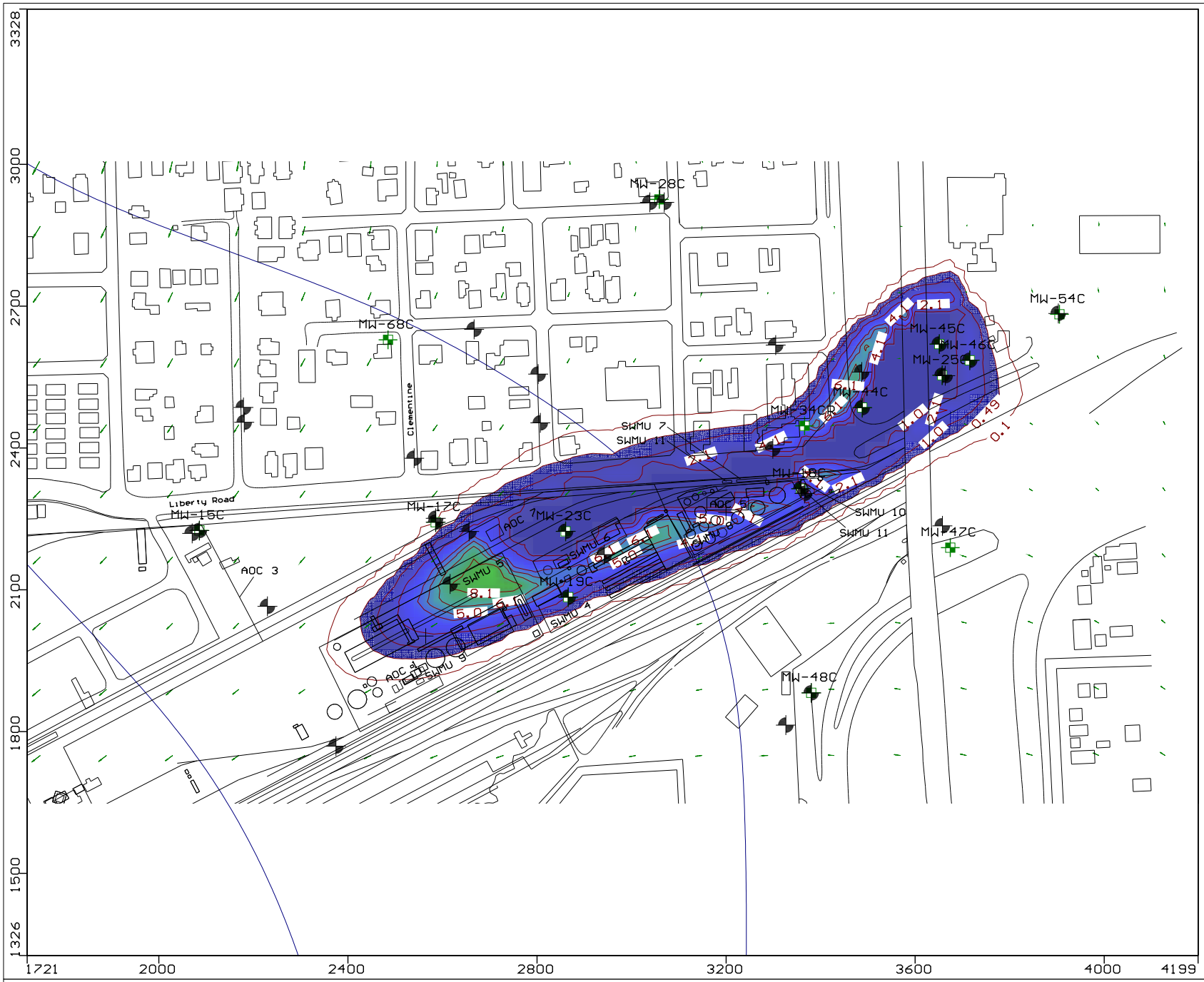
Day 19737, Aug 2014 (Kd 1.59E-7, first order decay 2E-5)

Figure 5 - Simulated Naphthalene Concentrations - 100 years (Year 2115)



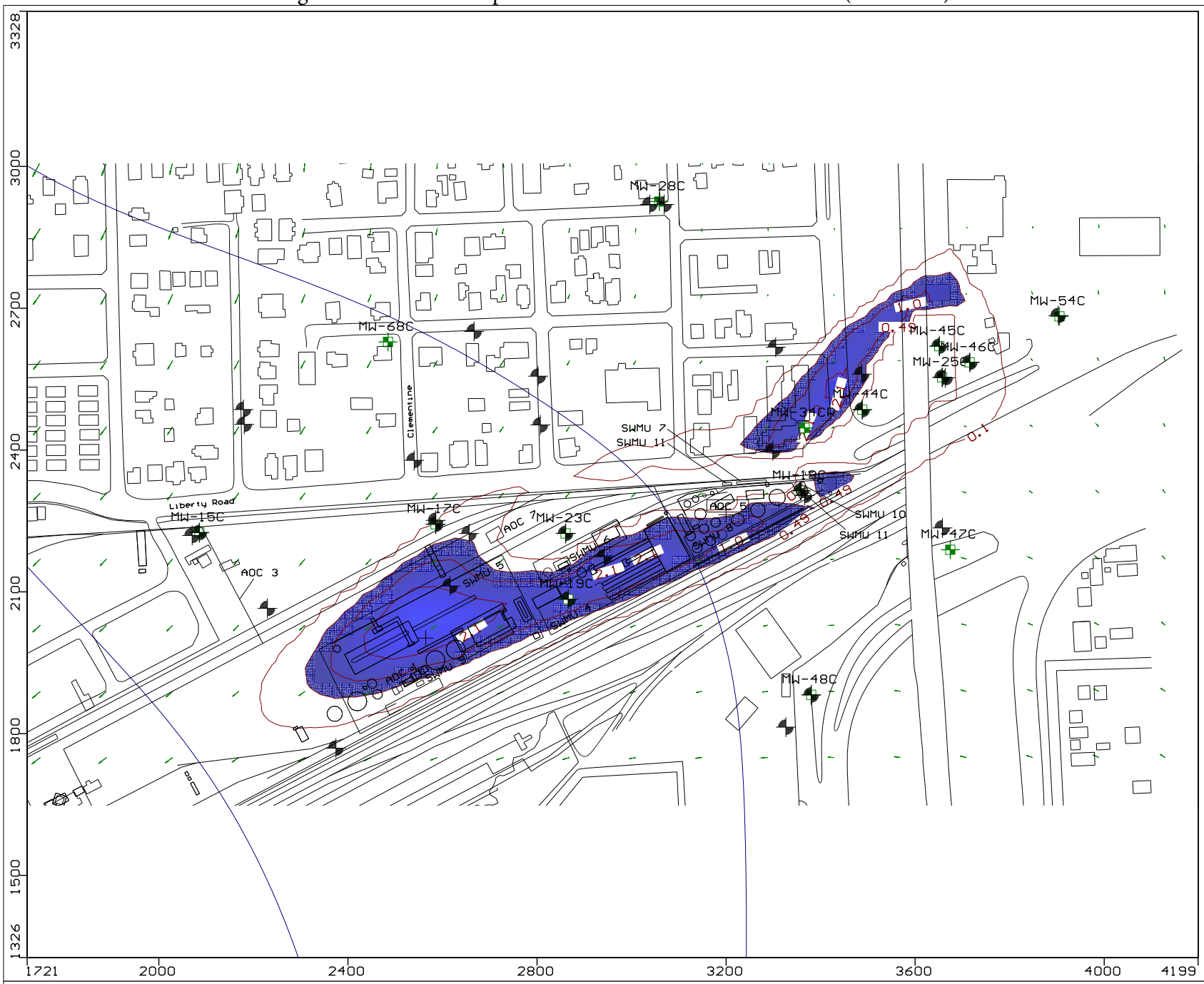
Day 56576, June 2115 (Kd 1.59E-7, first order decay 2E-5) - no remediation

Figure 6 - Simulated Naphthalene Concentrations - 30 Years (Year 2045)



Day 31026, June 2045 (Kd 1.59E-7, first order decay 2E-5) - Source Removal Scenario

Figure 7- Simulated Naphthalene Concentrations - 100 Years (Year 2115)



Day 56576, June 2115 (Kd 1.59E-7, first order decay 2E-5) - Source Removal Scenario

Institutional Control	RAP Worksheet 2.4 Page 1 of 1	
Associated Information: Appendices 4, 5	ID No.: SWR ID 31547	Report Date: November 21, 2014

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.

Specify the property for which this applies. **Union Pacific (on-site Deed Notice) and 88 properties (including City of Houston right of way) (Restrictive Covenants) falling within the PMZ**

Repeat this worksheet for each different property for which an institutional control will be used. ***(*See Appendix 5 for full list of Worksheet 2.4 for each off-site property, map of properties, and summary table)***

Institutional Control	Type of Institutional Control[1]				Property Ownership		Anticipated Filing Date[2]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))	**X**				**X**		**Within 120 days of RAP approval**
Document use of physical or institutional control under Remedy Standard B §350.31(g))	**X**	**X***			**X**	**X***	**Within 120 days of RAP approval (off-site IC)**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))	**X**	**X***			**X**	**X***	**Within 120 days of RAP approval (off-site PMZ)**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))	**X**	**X***			**X**	**X***	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[1] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[2] Specify date or amount of time after RAP approval.

Performance Measures

List and describe the performance measures for each environmental medium containing a PCLE zone that will be used to determine if reasonable progress is being made by the response action in a timely manner. Use these measures to document effectiveness of the response action in the RAER.

Surface/Subsurface Soils

For the impacted soils within the PCLE Zone to be excavated and relocated within the Area of Contamination, the effectiveness of the response action will be demonstrated by confirmation sampling from the excavation that indicates COC concentrations in remaining soils are below critical PCLs (commercial/industrial $^{Tot}Soil_{Comb}$ PCLs). During excavation activities, measures will be conducted to ensure migration of impacted soils do not leave the Area of Contamination (Soil Affected Property). These measures will include silt fencing, dust monitoring and control, and adequate storm water protection and management during the construction activities.

For the areas to be capped within the former HWPW (soil cap and asphalt roadway), performance measures will include routine cap and roadway inspections to ensure that these areas have not been eroded and thereby exposing soils with COC concentrations greater than cPCLs. Vegetation on the cap will be maintained, with the intent of cultivating vegetation attractive to pollinators. For the City of Houston ROW sidewalk and Englewood Intermodal Yard, performance measures will include routine inspections of the concrete sidewalk or pavement to ensure cracks have not developed in the pavement. Cracks will be repaired in the pavement. The railroad ballast area will be maintained as part of normal railroad operations in the area. These operations will include track and tie maintenance, as well as maintenance of the ballast material for the functions of the rail lines. Inspections of the ballast will assess if areas of exposed soil are present within the soil PCLE Zone.

A cap inspection and maintenance program will be conducted to maintain the integrity of the physical controls and to ensure that it continues to meet its performance objectives. See RAP Worksheet 3.2.

Groundwater

Groundwater monitoring will be performed in conjunction with the PMZ (Standard B) response action proposed for the groundwater PCLE zone. Confirmation that the downgradient extent of the PCLE Zone does not expand outside the boundaries of the on-site and off-site PMZs will be provided by comparing concentrations of these COCs to the AALs or exceedance of a cPCL at a POE well as specified in Worksheet 2.1. In the event that an AAL or a cPCL in an alternate POE well is exceeded in an initial monitoring sample, a second confirmation sample will be collected within 60 days from the monitoring well where the initial unverified exceedance was observed and analyzed for the specific COC that exceeded its AAL. If the COC concentration in the second sample is greater than the AAL, a confirmed AAL exceedance will be concluded and further action will be required, unless an alternate source demonstration can explain the detection. Possible further actions for the site following a confirmed AAL exceedance may include modifications to the monitoring frequency or monitoring locations (e.g., installation of additional monitoring locations), re-evaluation of concentration trends in existing monitoring wells, or re-evaluation of the AALs in the context of overall COC data trends (see Appendix 7 for Mann-Kendall Analysis). The TCEQ will be promptly notified of any verified exceedances. Further details of the Sampling and Analysis Plan are provided in Worksheet 3.1 and Appendix 6.

NAPL Recovery

UPRR will continue monthly DNAPL recovery activities from the wells where DNAPL has been detected and recovered. The results from the 24-month DNAPL recovery pilot test completed in January 2015 (PBW, 2015) indicated the following:

- Once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested.
- The current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time.

Performance measures for DNAPL recovery will be no significant DNAPL thickness increase in the wells pumped (compared to pre-test levels), and no migration of DNAPL to wells that had no previous indication of DNAPL present (in-well observations as well as NAPL noted in the boring log in the GWBU). DNAPL recovery performance and effectiveness will be evaluated annually as part of the post-response action care reporting.

Potential Problems

Complete the table for the response action. When the response action consists of several components or multiple actions, complete one table for each major component or action.

Response Action Name/Designation: **Soil Consolidation and Cap**

List the potential problems that might be reasonably anticipated for the response action, describe the impact of each problem, and the response to the problem.

Description of the Potential Problem	Impact	Will this cause a response action failure?		Corrective Response
		Yes	No	
Storm events during excavation and relocating impacted soils at the Site	Potential surface water/run-off impact		X	Develop storm water management plan for excavation and relocation activities, including a Storm Water Pollution and Prevention plan (SWPPP) and contingencies for storm water containment, silt fencing, and diversions around excavation areas.
Migration of dust during soil relocation	Potential migration of impacted soils		X	Develop a dust monitoring and suppression program for the excavation activities

General deterioration of the clay, asphalt, or concrete cover over time.	Exposure of COCs in capped soils, exposed to storm water, potentially windblown dust, worker exposure	X		UPRR will develop an inspection and maintenance program to identify and correct any deterioration of the vegetated clay cap for the HWPW area and repair or replace asphalt roadway, or concrete in the Englewood Intermodal Yard and City of Houston ROW. See RAP Worksheet 3.2.

Response Action Name/Designation: **PMZ/TI Zone**

List the potential problems that might be reasonably anticipated for the response action, describe the impact of each problem, and the response to the problem.

Description of the Potential Problem	Impact	Will this cause a response action failure?		Corrective Response
		Yes	No	
Exceedance of COC AAL at AMP or POE	Potential migration of groundwater PCLE Zone beyond on-site and off-site PMZ	X		Re-evaluate the groundwater concentrations to determine if the PCLE is migrating beyond the PCLE Zone. If migration confirmed, UPRR will evaluate response actions to prevent or mitigate the PCLE Zone outside of the on-site and off-site PMZs. The boundaries of the PMZs will also be evaluated.
DNAPL migration to wells that had no previous indication of DNAPL (in-well or soil boring observation)	Potential migration of NAPL/groundwater PCLE Zone beyond TI Zones	X		Re-evaluate DNAPL recovery options to prevent lateral or vertical migration.

Monitoring and Sampling	RAP Worksheet 3.1 Page 1 of 2	
Associated Information: Attachment 3A	ID No.: SWR ID 31547	Report Date: December 7, 2015 – Rev 1

List the monitoring and sampling of COC concentrations or other parameters that will be conducted during the response action. Illustrate the monitoring or sampling locations in Attachment 3A. If statistics or geostatistics will be used, provide details in Appendix 7. If monitoring or observation wells will be constructed for the response action, provide well construction details in Attachment 2B if not previously provided.

Monitored Media	COC[1]	Other parameter (specify)	Sampling Method[2]	Sampling points or locations[3]	Depth/Height[4] (ft.)	Analytical or Field Screening Method	Sampling or Monitoring Frequency[5]
Surface Soil	Site Specific SVOCs: Benzo(a)anthracene Benzo(a)pyrene Dibenzofuran 1,2-Diphenylhydrazine 2,4-Dinitrotoluene Fluoranthene Phenanthrene		Bulk sampling	PCLE zone excavation; and perimeter of proposed soil cap area to confirm soil PCLE zone for cap	Sidewalls and base of excavation; and near the soil cap from 0-5 feet bgs.	US EPA 8260	One time
Subsurface Soil	None						
Groundwater	Site-Specific VOCs		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 8260	Semi-Annual
	Site-Specific SVOCs		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 8270	Semi-Annual
	Arsenic, lead		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 6010/6020	One-time to evaluate metals in groundwater.

Explain the reasons for the above-listed monitoring and sampling plan.

The monitoring and sampling plan for the groundwater PCLE zone was developed in accordance with PMZ monitoring procedures provided in §350.33(f)(4)(D). As specified therein, AMPs were established at a hydraulically upgradient location within the PCLE zone for each unit (A-TZ,

[1] Specify the COCs to be monitored in this media. List either type of COC (such as VOCs, metals) if all the COCs of that type will be monitored the same way.
[2] Describe the sampling or monitoring methods and QC procedures in Appendix 1 unless the proposed sampling or monitoring procedure is the same as the sampling or monitoring procedure described in the APAR.
[3] Specify the sampling or monitoring point, such as the specific monitor well or general sampling or monitoring location.
[4] Specify the depth or height of the sampling or monitoring points.
[5] Specify the frequency at which this monitoring or sampling will occur.

B-CZ/B-TZ, and C-TZ) and at locations continuing down the approximate central flow path to the downgradient extent of the on-site and off-site PMZ. These are the AMPs for which AALs were developed as detailed in Attachment 2E. Selected monitoring wells (i.e., corrective action observation wells) not located along the approximate central flow path will continue to be monitored to evaluate potential migration of the PCLE Zone at the upgradient, cross-gradient, and downgradient POEs. The four D-TZ monitoring wells will also be sampled to evaluate the potential for vertical migration of COCs to the underlying water-bearing zone. Semi-annual monitoring of the wells is proposed based on the stability of the PCLE zone and absence of potential receptors in the area. With the main source area proposed to be capped, most of the monitoring wells within the capped area will be plugged and abandoned. Selected monitoring wells will be modified (surface completion) following the cap construction (MW-19C and MW-23C).

Additional POE wells are proposed to be installed in the B-CZ/B-TZ off-site (two wells (PMW-83B and PMW-84B) and in the C-TZ off-site (one well (PMW-85C)). Details of the well construction are provided in Attachment 2B.

ATTACHMENT 3A

PROPOSED GROUNDWATER MONITORING NETWORK

ATTACHMENT 3A TABLE 1 – PROPOSED PLUME MANAGEMENT ZONE (PMZ) MONITORING WELL NETWORK

ATTACHMENT 3A TABLE 2 – CORRECTIVE ACTION OBSERVATION WELLS

ATTACHMENT 3A TABLE 3 – CORRECTIVE ACTION SYSTEM WELLS

ATTACHMENT 3A – PMZ GROUNDWATER MONITORING NETWORK

ATTACHMENT 3A - TABLE 1

PROPOSED PLUME MANAGMENT ZONE (PMZ) MONITORING WELL NETWORK
UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON, TEXAS

WELL NO.	AMP/POE Well	DATE INSTALLED	NORTHING	EASTING	TOP OF CASING ELEVATION (FT HVD)	TOTAL DEPTH (FT BGS)	Top Screen Interval (FT BGS)	Bottom Screen Interval (FT BGS)	Zone
A-TZ MONITORING WELLS									
MW-15A	POE	2/25/1997	728,755	3,166,931	50.41	30	12	26.1	A-TZ
MW-18A*	AMP	2/26/1997	728,839	3,168,227	51.57	35	18	32.5	A-TZ
MW-25A	AMP	3/7/2000	729,089	3,168,524	44.65	29	18.5	28.5	A-TZ
MW-26A	POE	3/7/2000	729,159	3,167,519	44.62	26	14.5	24.5	A-TZ
MW-35A	POE	2/21/2007	728,985	3,167,045	44.75	28	13	28	A-TZ
MW-36A	POE	2/22/2007	729,148	3,168,167	44.53	28	18	28	A-TZ
MW-44A	AMP	2/22/2007	729,021	3,168,349	45.11	28	18	28	A-TZ
MW-50A	POE	3/1/2007	727,501	3,167,958	46.96	25	15	25	A-TZ
MW-59A	POE	1/28/2009	728,155	3,168,358	44.18	21	11	21	A-TZ
MW-60A	POE	1/26/2009	728,825	3,168,823	46.79	28.5	18.5	28.5	A-TZ
MW-61A	POE	1/26/2009	728,336	3,168,630	44.67	22	12	22	A-TZ
MW-69A	POE	6/23/2010	728,136	3,168,234	45.71	18.5	8.5	18.5	A-TZ
MW-77A	POE	5/7/2014	727,672	3,166,981	49.05	25	13	23	A-TZ
B-CZ/B-TZ MONITORING WELLS									
MW-33BR	AMP	12/19/2011	729,142	3,167,662	44.86	40	28	38	B-CZ
MW-36B	POE	6/24/2010	729,161	3,168,172	44.07	43	38	43	B-CZ
MW-38B	POE	12/31/2003	728,319	3,165,945	45.51	37	25.5	35.5	B-TZ
MW-39B	POE	12/16/2003	728,424	3,166,019	49.58	40	29.5	39.5	B-TZ
MW-42B	POE	8/24/2006	728,257	3,166,324	50.52	42	30	40	B-TZ
MW-59B	POE	6/26/2010	728,145	3,168,358	44.36	33	28	33	B-CZ
MW-62B	POE	1/21/2009	728,190	3,165,880	48.16	35	25	35	B-TZ
MW-63B	AMP	1/28/2009	729,361	3,167,652	44.48	36	31	36	B-CZ
MW-67B	POE	6/26/2010	729,782	3,167,588	43.93	40	35	40	B-CZ
MW-70B	AMP	12/14/2011	728,944	3,167,671	45.02	40	25	35	B-CZ
MW-80B	POE	5/8/2014	727,907	3,168,201	47.107	35	29	34	B-TZ
MW-81B	POE	5/11/2014	727,292	3,167,926	46.766	40	29	34	B-TZ
P-12[1]	POE	3/27/1991	727,912	3,166,127	48.78	50	36.3	38.3	B-TZ
P-11	POE	3/25/1991	728,049	3,166,025	48.98	50	36.2	38.2	B-TZ
PMW-83B	POE	Proposed			TBD	~40	TBD	TBD	B-TZ
PMW-84B	POE	Proposed			TBD	~40	TBD	TBD	B-CZ
C-TZ MONITORING WELLS									
MW-15C	POE	4/25/1997	728,761	3,166,947	50.01	75	64	73.5	C-TZ
MW-17C	AMP	12/10/2003	728,779	3,167,446	50.17	70	59.5	69.5	C-TZ
MW-21C	POE	10/26/1998	727,730	3,165,884	49.05	72.5	62.5	72.5	C-TZ
MW-23C	AMP	10/14/1998	728,759	3,167,721	51.91	72.5	62.5	72.5	C-TZ
MW-28C	POE	4/12/2001	729,461	3,167,920	43.96	88	75	85	C-TZ
MW-34CR	AMP**	5/9/2014	728,982	3,168,227	46.47	70	60	70	C-TZ
MW-47C	POE	3/16/2007	728,725	3,168,535	45.61	71	61	71	C-TZ
MW-48C	POE	2/2/2004	728,417	3,168,241	44.68	72	60	70	C-TZ
MW-51C	POE	5/10/2014	726,935	3,166,894	47.48	80	62	72	C-TZ
MW-54C	POE	8/15/2006	729,218	3,168,766	44.99	72	60	70	C-TZ
MW-68C	AMP**	6/25/2010	729,164	3,167,346	44.8	70	60	70	C-TZ
PMW-85C	POE	Proposed			TBD	~70	TBD	TBD	C-TZ

Notes:
POE - Point of Exposure Wells
AMP - Attenuation Monitoring Points (AMPs)
Monitoring well MW-18A is within the proposed soil cap area, well will be replaced
BGS=Below Ground Surface
HVD = Elevations relative to Houston Vertical Datum, Houston Monument System
Northing/Easting = Coordinates based on NAD 1927 Texas State Plane, South Central Zone, US Survey Feet
1 - Well P-12 also serves as background well for SWMU 1 (Detection Monitoring)
* - Well will be replaced with MW-18AR (current location within soil cap area and will be plugged)
** - AALs not calculated for these wells (upgradient and cross-gradient of primary source area), but will be monitored.

ATTACHMENT 3A - TABLE 2

CORRECTIVE ACTION OBSERVATION WELLS
UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON, TEXAS

WELL NO.	PURPOSE OF CORRECTIVE ACTION OBSERVATION WELL	DATE INSTALLED	NORTHING	EASTING	TOP OF CASING ELEVATION (FT HVD)	TOTAL DEPTH (FT BGS)	Top Screen Interval (FT BGS)	Bottom Screen Interval (FT BGS)	Zone
A-TZ MONITORING WELLS									
MW-22A	Off-site PCLE	10/1/1998	727,876	3,165,677	46.07	25	10	20	A-TZ
B-CZ/B-TZ MONITORING WELLS									
MW-22B	Off-site PCLE	10/27/1998	727,871	3,165,678	45.86	38	27.5	37.5	B-TZ
MW-35B	Off-Site PCLE	2/26/2007	728,988	3,167,045	44.83	42	32	42	B-CZ
MW-49B	On-Site PCLE	1/24/2009	728,375	3,168,184	46.43	35	30	35	B-CZ
PMW-83B	Off-site PCLE	Proposed			TBD	~40	TBD	TBD	B-TZ
C-TZ MONITORING WELLS									
MW-76C	On-Site PCLE	5/7/2014	727,485	3,166,628	47.84	70	60	70	C-TZ
PMW-85C	On-Site PCLE	Proposed			TBD	~70	TBD	TBD	C-TZ
D-TZ MONITORING WELLS									
MW-36D	Sentry monitoring	6/23/2010	729,162	3,168,180	44.33	110	100	110	D-TZ
MW-59D	Sentry monitoring	1/27/2009	728,114	3,168,365	44.22	118	108	118	D-TZ
MW-65D	Sentry monitoring	1/17/2009	729,512	3,168,331	44.55	110	100	110	D-TZ
MW-66D	Sentry monitoring	1/20/2009	729,137	3,169,381	46.51	103	93	103	D-TZ

Notes:
These monitroing wells are not part of the proposed monitoring network. Wells listed above are to evaluate PCLE Zones outside of the PMZs, and sentry wells forr the D-
BGS=Below Ground Surface
HVD = Elevations relative to Houston Vertical Datum, Houston Monument System
Northing/Easting = Coordinates based on NAD 1927 Texas State Plane, South Central Zone, US Survey Feet

ATTACHMENT 3A - TABLE 3

CORRECTIVE ACTION SYSTEM WELLS
UPRR HOUSTON WOOD PRESERVING WORKS, HOUSTON, TEXAS

WELL NO.	PURPOSE OF CORRECTIVE ACTION SYSTEM WELL	DATE INSTALLED	NORTHING	EASTING	TOP OF CASING ELEVATION (FT HVD)	TOTAL DEPTH (FT BGS)	Top Screen Interval (FT BGS)	Bottom Screen Interval (FT BGS)	Zone
A-TZ MONITORING WELLS									
MW-57A	DNAPL recovery	1/22/2009	728,858	3,167,974	47.72	27	12	27	A-TZ
MW-78A	DNAPL recovery	5/6/2014	727,953	3,167,512	48.68	30	15	25	A-TZ
B-CZ/B-TZ MONITORING WELLS									
MW-12B	DNAPL recovery	2/27/1997	728,328	3,166,004	50.02	45	32.5	42.5	B-TZ
MW-32B	DNAPL recovery	12/15/2011	728,918	3,167,400	44.73	40	26	36	B-TZ
MW-41B	DNAPL recovery	1/7/2003	728,176	3,166,003	49.37	40	29.5	39.5	B-TZ
MW-70B	DNAPL recovery	12/14/2011	728,944	3,167,671	45.02	40	25	35	B-CZ
MW-75B	DNAPL recovery	12/20/2011	728,066	3,168,022	47.18	40	32.2	37.2	B-TZ
C-TZ MONITORING WELLS									
MW-23C	DNAPL recovery	10/14/1998	728,759	3,167,721	51.91	72.5	62.5	72.5	C-TZ
MW-44C	DNAPL recovery	1/16/2004	729,021	3,168,349	45.03	70	57.5	67.5	C-TZ
MW-45C	DNAPL recovery	1/20/2004	729,155	3,168,512	44.73	70	58	68	C-TZ
MW-46C	DNAPL recovery	1/9/2004	729,121	3,168,576	44.94	72	60	70	C-TZ

Notes:
These monitroing wells are not part of the proposed monitoring network. Wells listed above are to evaluate DNAPL, PCLE Zone on west side off site, and sentry wells for the D-TZ
BGS=Below Ground Surface
HVD = Elevations relative to Houston Vertical Datum, Houston Monument System
Northing/Easting = Coordinates based on NAD 1927 Texas State Plane, South Central Zone, US Survey Feet

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).
4. **- Corrective Action observation well.

N

Approx. Scale in Feet

0 200 400

Source:
Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

MW-67B, PMW-84B, MW-65D, MW-28C, PMW-83B, PMW-83C, MW-63B, MW-68C, MW-33BR, MW-36B, MW-36D, MW-45C, MW-54C, MW-66D, MW-36A, MW-44A, MW-46C, MW-26A, MW-25A, **PMW-82B, MW-35B**, MW-35A, MW-34CR, MW-44C, MW-70B, MW-32B, MW-18AR, MW-57A, MW-60A, MW-15C, MW-15A, MW-17C, MW-47C, MW-19C**, MW-39B, MW-48C, **MW-49B, MW-61A, MW-38B, MW-12B, MW-42B, MW-62B, MW-41B, MW-59A, MW-59B, MW-59D, MW-69A, MW-75B, MW-78A, MW-80B, P-11, P-12, MW-22BR**, MW-22AR**, MW-10B, MW-11B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, PMW-86C**

Lucille, Fontinot, Lelia, Erastus, Cushing, Lockwood, Wipprecht, Solo, Kashmere, Wylie, Clementine, Liberty Road, Harlem, Sudan, Eraku

(DNAPL)

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 3A

PMZ GROUNDWATER MONITORING NETWORK

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Operation and Maintenance	RAP Worksheet 3.2 Page 1 of 1	
	ID No.: SWR ID 31547	Report Date: November 21, 2014

Use this worksheet to describe the operation and maintenance (O&M) activities for each response action. In situations where the response action consists of more than one major component, for clarity one worksheet can be completed for each major component.

Response Action Name/Designation: **Remedy Std. B – Clay/Concrete Cap, Asphalt Roadway and PMZs/Tis**

List all portions of the response action to which this information applies.

Describe the O&M and inspection activities that will be required to operate and maintain response action components.

An inspection and maintenance program will be implemented for the clay cap and associated features of the clay cap within the former HWPW area, asphalt roadway within the former HWPW area, for the concrete sidewalk off-site along the City of Houston ROW immediately north of the Site, and the concrete pavement area within the Englewood Intermodal Yard. Inspections of the railroad ballast area between the former HWPW and Englewood Intermodal Yard will also be conducted to evaluate issues with the ballast continuing to serve as a physical barrier. Groundwater monitoring will be conducted within the PCLE zone, PMZ and adjacent areas. Regular sampling of the wells will occur on a semi-annual and annual basis depending on the wells. At that time the monitoring wells will be inspected for signs of damage, including well pads, casing, locks, and, protective covers. The total depth of wells will be measured annually.

The inspection and maintenance program for the capped areas is described on RAP Worksheet 5.0.

The groundwater monitoring program is provided on RAP Worksheet 3.1.

List and discuss the key operating parameters for a properly functioning response action. Address how changes in these parameters will result in operating changes, providing sufficient detail to explain how the operator will know the component is functioning properly.

Not applicable.

List the routine tasks required to operate the response action.

Not applicable.

List the routine tasks required to maintain the response action, including scheduled inspections, maintenance, and component replacement.

Routine tasks to be performed as part of the proposed response actions include the following:

1. Quarterly soil cap (HWPW), asphalt roadway, concrete sidewalk and cap, and railroad ballast inspections;
2. Semi-annual groundwater sampling and analysis, evaluation of monitoring data, and monitoring well inspection and repair (if needed).
3. Monthly DNAPL recovery from selected wells (frequency to be evaluated annual for effectiveness).

Confirmation Sampling Plan	RAP Worksheet 4.0 Page 1 of 2	
Associated Information: Attachment 4A	ID No.: SWR ID 31547	Report Date: December 7, 2015

List the COCs and other parameters that will be sampled to confirm completion of the response action. Illustrate the monitoring or sampling locations in Attachment 4A. If monitoring or observation wells will be constructed for the response action, provide well construction details in Attachment 2B if not previously provided. If needed, describe the sample collection and handling methods, if not previously provided, in Appendix 6.

Media	COC[1]	Other parameter (specify)	Sampling Method	Sampling points[2]	Depth/height (ft.)	Analytical Method	Sampling Frequency
Surface Soil	Site Specific SVOCs: Benzo(a)anthracene Benzo(a)pyrene Dibenzofuran 1,2-Diphenylhydrazine 2,4-Dinitrotoluene Fluoranthene Phenanthrene		Bulk sampling	PCLE zone excavation within AOC	Sidewalls of excavation	US EPA 8260	One time
Subsurface Soil	None						
Groundwater	Site-Specific VOCs		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 8260	Semi-Annual and Annual
	Site-Specific SVOCs		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 8270	Semi-Annual and Annual
	Arsenic, lead		Same as APAR (low-flow sampling)	See Attachment 3A for list of wells	Middle of screened interval of monitoring well	US EPA 6010/6020	One-time to evaluate metals in groundwater.
Surface water							
Sediment							

[1] Specify either a specific COC or type of COC (such as VOCs, metals).
[2] Specify the sampling point to the degree it is known, (for example, MW-1, or near former boring #2).

Air							
Other media (specify)							

Explain the reasons for the above-listed sampling plan. Discuss statistical or geostatistical methodology(ies) which will be applied, if any, in the data collection process. Discuss any assumptions made in the statistical/geostatistical assessment, and how they will be met.

See explanation previously provided in Worksheet 3.1.

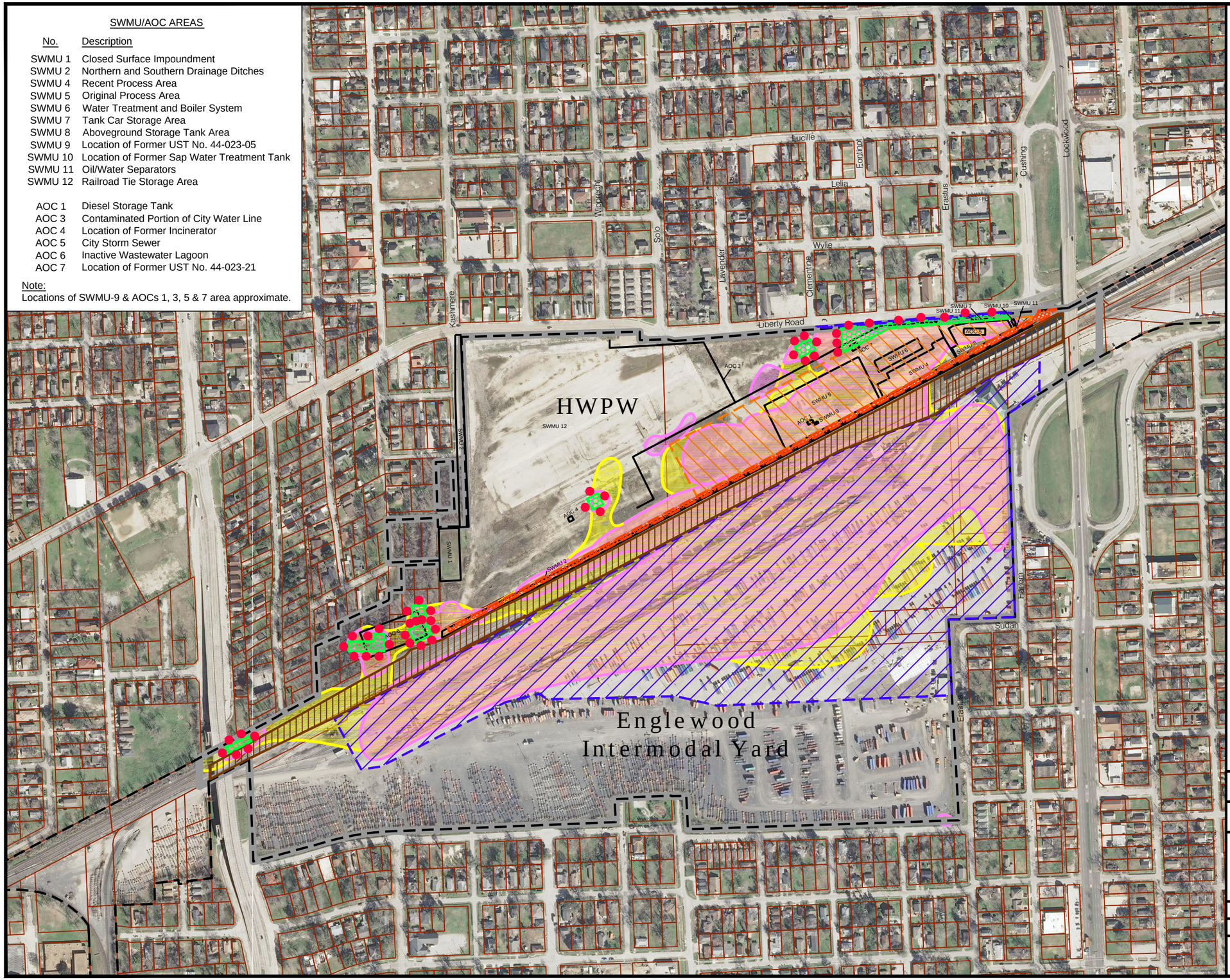
ATTACHMENT 4A

ATTACHMENT 4A – MAP OF CONFIRMATION SAMPLE POINTS

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 & AOCs 1, 3, 5 & 7 area approximate.



EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)

Area of Contamination:

- Soil Affected Property
- Soil PCLE Zone
- Railroad Ballast Cap Area
- Concrete Cap Area
- Extent of Soil Cap
- Asphalt Road/Cap Area
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
- Proposed Soil Confirmation Sample Locations (Locations may be adjusted pending field conditions)

Note:
Vertical datum based on City of Houston Vertical Datum (HVD).

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 4A

CONFIRMATION SAMPLING PLAN - SOILS

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Post-Response Action Care	RAP Worksheet 5.0 Page 1 of 4	
Associated Information: Attachments 5A-5C	ID No.: 31547	Report date: December 7, 2105

Complete this worksheet only if Remedy Standard B will be used.

What is the proposed initial post-response action care period? (default 30 yr.) **30** years

If the proposed initial post-response action care period is less than 30 years, provide a technical justification in accordance with §350.33(h).

Soil Response Action
The initial post-response action care period for the clay cap (HWPW), asphalt roadway (HWPW), concrete sidewalk (off-site City of Houston ROW), concrete pavement (Englewood Intermodal Yard), and railroad ballast area is 30 years. Inspections and maintenance of the caps will be performed for an initial period of 30 years.

Groundwater Response Action
The post-response action care period for groundwater monitoring will be 30 years. However, if groundwater concentrations decrease to levels below cPCLs, or groundwater COC trends confirm stable or decreasing concentrations, a shorter post-response action care period may be proposed.

What is the foreseeable land use during the post-response action care period? Commercial/Industrial and Residential (off-site properties)

Describe how the future use of the property will not compromise the integrity of the physical controls, will not interfere with the function of the monitoring systems, will not pose a threat to human health or the environment, and will be in accordance with any institutional controls.

For the four soil response areas within the Site, the former HWPW area is inactive and UPRR will restrict access to the HWPW soil capped area to those performing inspections, monitoring or maintenance. Access to the HWPW area is limited by fencing. The asphalt roadway is intended to only be used by UPRR employees and contractors for the servicing of rail and signal communications in the area. Signs will be posted stating that digging is prohibited on the capped area and asphalt roadway.

For the concrete cap area within the Englewood Intermodal Yard, this area will continue to be used for the commercial/industrial intermodal operations. The Englewood Intermodal Yard is secured by fencing and security guards that limit access to the area to UPRR employees, contractors, and vendors to the yard. The concrete pavement that makes up the cap was designed for its current use (i.e., allow loading, unloading, transportation, and storage of container boxes). The railroad ballast area will continue to be used for railroad operations and will be maintained for those operations. UPRR Engineering Standards for Roadbase Section for Wood Tie Track Construction (UPRR, 2006) indicates that the recommended minimum ballast thickness is 15 inches, which will serve as the protective barrier for on-site workers from exposure to surface soils.

For the proposed concrete sidewalk within the City of Houston ROW to address the surface soil PCL zone, the concrete cap will protect the occasional trespasser that may walk along the sidewalk. The addition of the sidewalk in the area provides additional benefit of allowing all access to mass-transportation bus stop. Signs will be posted stating that digging is prohibited within the concrete capped area.

Institutional controls will be placed on all properties within the groundwater PLCE Zones to prohibit installation of groundwater wells and use of the shallow groundwater. This extends from the UPRR

property (will be deed recorded commercial/industrial use only) to the off-site residential and City of Houston right of ways (ROWs) (Attachment 5A). The future use of the off-site properties will not affect the proposed response.

Briefly describe the proposed post-response action care activities. Describe the type of monitoring and/or inspections to be performed. Discuss the rationale for not including COC(s) analyzed during the response action, monitoring or sampling point location, frequency of monitoring and/or inspections, and the duration of the monitoring program.

The cap inspection and maintenance program will be developed to ensure the integrity of the cap and vegetative cover. The maintenance program will consist of the following:

I. Soil Cap Area - HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis and after all major storms. The inspections will focus on the following major issues:

1) Erosion of the cap (gullies, rills, or other erosional features on the cap surface or in drainages)
2) Sideslope sloughing (slippage)
3) Settling/subsidence
4) Vegetation deterioration
5) Damage from animals (i.e., rodents)
6) Groundwater monitoring equipment (wells) (semi-annual basis)

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE COVER AND VEGETATION

The cover and vegetation will be maintained by:

1) Preventing ponding
2) Maintaining design slopes and grades
3) Fertilizing, as necessary
4) Mowing, as necessary
5) Replanting, as necessary
6) Controlling animals (rodents, hogs) and insects

Routine repairs of the cover and maintenance of the slopes and grades will be performed to prevent ponding and drainage problems. Vegetation may require periodic application of fertilizer, mulch or seed. Vegetation will target pollinator seed mixes to attract pollinator species. Mowing will be performed as needed but less frequently than a grass covered cap and only periodically to promote the growth of desired vegetation and to block the growth of trees or shrubs which could penetrate the cover soil with their roots.

EROSION CONTROL

Maintenance of the drainage and diversion portions of the cap will be performed. Erosion of soil by water and/or wind will be repaired as soon as practicable.

II. Asphalt Roadway Area – HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Erosion of the asphalt roadway (potholes, exposed soils)
2) Settling/subsidence
3) Cracks in asphalt roadway

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE ASPHALT ROADWAY

The asphalt cover will be maintained by:

1) Crack repair/sealing;
2) Pothole patching; and
3) Controlling vegetation.

III. Concrete Sidewalk – City Of Houston ROW along Liberty Road (Off-Site), and Concrete Pavement – Englewood Intermodal Yard (On-Site)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Step separation in the concrete;
2) Settling/subsidence;
3) Cracks in the concrete; and
4) Openings in the sidewalk.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE CONCRETE SIDEWALK/PAVEMENT

The concrete sidewalk will be maintained by:

1) Crack repair/sealing;
2) Replacing panels as needed; and
3) Controlling vegetation growing through cracks/along edges of sidewalk.

IV. Railroad Ballast Area – (HWPW/Englewood Intermodal Yard)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Ballast removed with exposed soil.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE RAILROAD BALLAST

The railroad ballast will be maintained by:

1) Adding railroad ballast where areas of soil are exposed;
2) Controlling vegetation.

The ballast areas will be maintained in accordance with UPRR Engineering Standards for Roadbase Section for Wood Tie Track Construction (UPRR, 2006).

GROUNDWATER MONITORING

Groundwater monitoring will be conducted per the Groundwater Monitoring Plan described on RAP Worksheet 3.1. Sample data from the AMPs will be compared to the AALs, as well as data from the POE

wells compared to the applicable cPCLs. The results of groundwater monitoring will be submitted annually in the PRACR. Groundwater monitoring will be performed as described in Worksheets 2.1, 3.0, and 4.0.

Will PRAC sampling procedures be the same as those as previously documented for monitoring and/ or confirmation sampling? ____ Yes **X** No

If no, provide in Appendix 6 a description of the monitoring or sampling collection procedures to be conducted during the post-response action care period.

Cost Estimate

Complete this portion of the form only if a physical control is proposed (installed hydraulic control system, slurry wall, cap, etc.). Provide in Attachment 5B a detailed cost estimate for a third party to operate and maintain the physical control during the PRAC period, based on current dollar amount.

Specify the physical control to which this information applies: HWPW Vegetated Clay Cap, Asphalt Roadway, City of Houston ROW Sidewalk, Englewood Intermodal Yard Concrete Pavement, and Railroad Ballast (shown on Attachment 5A)

Complete this worksheet for each physical control that will be used as part of the response action.

What is the total estimated annual cost of O&M for the PRAC period? $42,000/year

What is the total estimated cost for a third party to perform PRAC activities? $1,260,000 (30-yrs)

Identify the type of financial assurance mechanism to be used, and the contact person managing fiduciary responsibility, if known.

UPRR will submit an appropriate financial assurance mechanism to TCEQ within 90 days of RAP approval.

Does the person meet the criteria and definition of a small business? (see §350.33(n)) ___ Yes **X** No

If yes and the person desires to pursue the reduced amount of financial assurance, provide a legally binding affidavit as Attachment 5C. Include in the affidavit the information requested in 30 TAC §350.33(l), (m), and (n). An example affidavit is attached in the instructions.

ATTACHMENT 5A

POST-RESPONSE ACTION CARE MONITORING MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Soil Affected Property
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Railroad Ballast Cap Area
- Concrete Cap Area
- Extent of Soil Cap
- Asphalt Road/Cap Area
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ
(A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

N

Approx. Scale in Feet

0 200 400

Source:
Houston-Galveston Area Council (HGAC) 2012 Aerial.

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).
4. **- Corrective Action observation well.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille Lelia Wylie Liberty Road Clementine Wipprecht Solo Kashmere Fontinot Erastus Cushing Lockwood Harlem Sudan

MW-67B PMW-84B MW-65D** PMW-83B PMW-83C MW-28C MW-63B MW-68C MW-33BR MW-26A MW-36B MW-36D** MW-36A MW-44A (DNAPL) MW-45C MW-46C (DNAPL) MW-54C MW-66D** MW-25A **PMW-82B MW-35B** MW-35A MW-32B MW-70B (DNAPL) MW-34CR MW-44C (DNAPL) MW-18AR MW-60A MW-15C MW-15A MW-57A (DNAPL) MW-17C MW-23C (DNAPL) MW-19C*** MW-47C MW-39B MW-38B MW-12B (DNAPL) MW-41B (DNAPL) MW-42B MW-62B P-11 P-12 MW-02 MW-01A MW-10A MW-10B MW-11B MW-08 MW-11A MW-07 MW-22BR** MW-22AR** **MW-49B MW-48C MW-61A MW-69A MW-59A MW-59B MW-59D** MW-75B (DNAPL) MW-78A (DNAPL) MW-80B PMW-85C MW-77A MW-76C** MW-50A MW-81B PMW-86C**

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Attachment 5A

POST-RESPONSE ACTION CARE MONITORING MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

ATTACHMENT 5B

POST-RESPONSE ACTION CARE COSTS

ATTACHMENT 5B

Post-Response Action Care (PRAC) - Annual Operation and Maintenance Costs

Soil Cap (HWPW), Concrete Cap (Englewood Intermodal Yard), Railroad Ballast

Union Pacific Railroad Company - Houston Wood Preserving Works, Houston, TX

Capped Areas		
HWPW Vegetated Soil Capped Area	Approx. 12.5	Acres
HWPW Asphalt Roadway	Approx. 12.5	Acres
City of Houston ROW Sidewalk	Approx. 4,836	Ft^2
Englewood Intermodal Yard - Concrete Pavement Area	Approx. 42.5	Acres

Item	Estimated Quantity	Units	Unit Price	Total Cost
Site Inpections (Qtrly)	4	LS	$ 1,000	$ 4,000
Erosion Repairs	1	LS	$ 2,000	$ 2,000
Subsidence Repairs	1	LS	$ 2,000	$ 2,000
Vegetation Control (mowing, cutting)	6	bi-monthly	$ 4,500	$ 27,000
Fertilization	1	LS	$ 1,000	$ 1,000
Drainage Channel Repairs	1	LS	$ 1,000	$ 1,000
Asphalt/Concrete Repairs	2	LS	$ 2,500	$ 5,000
	Annual O&M (Year 1)			$42,000
	Annual O&M (Years 2 - 30)			$1,218,000
			Subtotal:	$1,260,000
			Total Estimated O&M Cost Soil Cap:	**$1,260,000**

Implementation Schedule	RAP Worksheet 6.0 Page 1 of 2	
	ID No.: SWR ID 31547	Report Date: December 7, 2015 – Rev 1

Document the proposed schedule for implementing the response action. Include all major response action activities through the life of the project, including all removal, decontamination, and control actions, component installations, O&M, monitoring, and post-response action care activities.

Implementation of Response Action (specify component or action)	Start	Finish	Duration
Filing of deed recordation for UPRR-owned properties requiring commercial/industrial land use and prohibiting groundwater use. Deed recordation will also restrict excavation activities over capped areas.	Upon RAP approval	Within 120 days from RAP approval	120 days
Filing of restrictive covenants prohibiting groundwater use for off-site PMZ (if not all of the properties have ICs filed within 120 days of date RAP approved, UPRR will request an extension to the due date to complete the necessary off-site ICs). Filing of deed recordation for City of Houston ROW for prohibiting groundwater use and restriction of excavation where concrete sidewalk will be installed.	Upon RAP approval	Within 120 days from RAP approval	120 days
Plugging of monitoring wells within the capped area, installation of additional monitoring wells at the POEs	Within 60 days of RAP approval	Within 120 days of RAP approval	60 Days
Excavation of Surface Soil PCLE Zone, relocation under the AOC Policy, and construction of the soil cap, asphalt roadway, and concrete sidewalk	Within 60 days of RAP approval	Within 150 days of RAP approval	90 Days
Former Surface Impoundment (SWMU 1) Post-Response Action Care Soil Evaluation for Closure	Within 60 days of RAP approval	Within 150 days of RAP approval	90 Days
Semi-Annual groundwater monitoring (submitted to TCEQ under the Annual Groundwater Monitoring Report)	Ongoing	Uncertain-subject to monitoring results	Uncertain – subject to monitoring results
Monthly DNAPL Recovery Activities (with annual evaluation of effectiveness), reporting with the Post-Response Action Care Reports as an attachment to the Annual Groundwater Monitoring Report	Ongoing	Uncertain – to be evaluated annually	Uncertain – to be evaluated annually
Physical Barrier (Cap/Sidewalk/Pavement/Ballast) Inspection and Maintenance	Soil Cap – 180 days following construction; on-going for concrete cap	30 years	30 yr O&M
Annual Groundwater Corrective Action Monitoring Report, documenting all remediation and post-response action activities at the Site including the Post-Response Action Care Reports (PRACR)	See the following Submittal table	See the following Submittal table	See the following Submittal table

List the proposed schedule for report submittals. Add additional lines if more reports than listed will be needed to complete the response action.

Reports	Submittal date
Response Action Effectiveness Report (RAER)	
RAER submittal number 1 -	

RAER submittal number 2	
RAER submittal number 3	
Subsequent RAER submittals	
Response Action Completion Report (RACR) (Soil Response Action, Additional MW Install for PMZ)	**60 days following soil Response Action**
Post-Response Action Care Report (PRACR) (to be submitted with the Annual Groundwater Monitoring Report as an attachment:	
PRACR submittal number 1	March 31, 2017
PRACR submittal number 2	March 31, 2018
PRACR submittal number 3	March 31, 2019
PRACR submittal number 4	March 31, 2020
PRACR submittal number 5	March 31, 2021
PRACR submittal number 6	March 31, 2022
PRACR submittal number 7	March 31, 2023
PRACR submittal number 8	March 31, 2024
PRACR submittal number 9	March 31, 2025
PRACR submittal number 10	March 31, 2026
PRACR submittal number 11	March 31, 2027
PRACR submittal number 12	March 31, 2028
PRACR submittal number 13	March 31, 2029
PRACR submittal number 14	March 31, 2030
PRACR submittal number 15	March 31, 2031
PRACR submittal number 16	March 31, 2032
PRACR submittal number 17	March 31, 2033
PRACR submittal number 18	March 31, 2034
PRACR submittal number 19	March 31, 2035
PRACR submittal number 20	March 31, 2036
PRACR submittal number 21	March 31, 2037
PRACR submittal number 22	March 31, 2038
PRACR submittal number 23	March 31, 2039
PRACR submittal number 24	March 31, 2040
PRACR submittal number 25	March 31, 2041
PRACR submittal number 26	March 31, 2042
PRACR submittal number 27	March 31, 2043
PRACR submittal number 28	March 31, 2044
PRACR submittal number 29	March 31, 2045
PRACR submittal number 30	March 31, 2046

***This schedule assumes RAP approval by March 31, 2016 and PMZ implementation (i.e., filing of required restrictive covenants) by September 30, 2016.**

LIST OF APPENDICES

APPENDIX	TITLE
1	**REFERENCES**
2A	**DATA TABLES** 4D-3 Summary of Surface Soil Sampling Results – Houston Wood Preserving Works
2B	**BORING LOGS**
3	**STUDIES/TESTS DOCUMENTATION** 3B – DNAPL Recovery Pilot Test Work Plan and 24-Month Report 3D – Request for Preliminary Review Of Area Of Contamination (AOC) - Update
4	**PROPOSED INSTITUTIONAL CONTROLS**
5	**LANDOWNER CONCURRENCE** 5A – Restrictive Covenants Signed 5B – Institutional Controls Not Signed/Landowner Cannot Be Located
6	**SAMPLING PROCEDURES - PROPOSED GROUNDWATER SAMPLING AND ANALYSIS PLAN**
7	**STATISTICAL METHODOLOGY**
8	**SPLIT MEDIA APPROVAL – NOT APPLICABLE**

APPENDIX 1

REFERENCES

ERM, 2000. *Affected Property Assessment Report (APAR)*, Houston Wood Preserving Works, Houston, Texas, June 10, 2000.

ERM, 2004. *Revised Affected Property Assessment Report (APAR)*, Houston Wood Preserving Works, Houston, Texas, June 10, 2004.

Kiilerich, O., Erik Arvin, 1996. Ground Water Contamination from Creosote Sites. NGWA Groundwater Monitoring and Remediation, Volume 16, Issue 1, pps 112-117, February

King, M.W.G., H. Malcolmson, J. Barker, 1994. Groundwater plume development from a complex organic mixture. In Proceedings: API/NGWA Conference – Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Houston, Texas, November 2-4, 1994

Pastor, Behling & Wheeler, LLC (PBW), 2010. *Affected Property Assessment Addendum, Wood Preserving Works, Houston, Texas*.

PRC Environmental Management, Inc. (PRC EMI, 1993). *RCRA Facility Assessment Report*, Southern Pacific Transportation Company, Houston, Texas, October 1993.

U.S. Environmental Protection Agency (US EPA), 1993. *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*. Office of Solid Waste and Emergency Response Directive 9234.2-25. Interim Final. September 1993.

APPENDIX 2

DATA TABLES AND BORING LOGS

2A DATA TABLES

4D-3 Summary of Surface Soil Sampling Results – Houston Wood Preserving Works

2B BORING LOGS (2015 Soil Investigation)

APPENDIX 2A

DATA TABLES

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-156	SB-157	SB-158	SB-159	SB-160	SB-161	SB-162	SB-163	SB-164
					Sample Date	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015
					Sample Interval	2.5-5	0-2	0-2.5	0-2.5	0-1.5	0-1	4-5	0-1	0-1
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals														
Arsenic		6020	2.00E+02	5.90E+00		4.12	5.16	34.7	6.55	6.86	3.51	2.33	8.92	5.21
Lead		6020	1.60E+03	2.75E+02		26.6	16.2	259	137	68.9	16.9	10.5	67.6	42.6
SVOCs (EPA Method 8270)														
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.00082	<0.00075	<0.00078	<0.00084	<0.00076	<0.00075	<0.00084	<0.00078	<0.00086
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		0.049	<0.00096	0.013	0.021	0.0055 J	<0.00097	<0.0011	<0.001	<0.0011
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		*<0.0015*	*<0.0014*	*<0.0014*	*<0.0016*	*<0.0014*	*<0.0014*	*<0.0016*	*<0.0015*	<0.0016
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		*<0.0018*	*<0.0016*	*<0.0017*	*<0.0018*	*<0.0016*	*<0.0016*	*<0.0018*	*<0.0017*	<0.0018
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0012	<0.0011	<0.0011	<0.0012	<0.0011	<0.0011	<0.0012	<0.0011	<0.0012
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		23	<0.0011	0.061	0.65	0.11	0.0022 J	0.0031 J	0.058	<0.0012
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		*<0.0016*	*<0.0015*	*<0.0016*	*<0.0017*	*<0.0015*	*<0.0015*	*<0.0017*	*<0.0016*	<0.0017
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		*<0.0025*	*<0.0022*	*<0.0023*	*<0.0025*	*<0.0023*	*<0.0023*	*<0.0025*	*0.015*	<0.0026
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		44	0.0068	0.13	0.96	0.14	<0.00054	<0.0006	0.41	0.003 J
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.34	0.023	0.19	0.39	0.17	0.052	0.019	0.18	0.067
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		32	0.034	0.62	1.5	0.31	0.089	0.0053	0.48	0.11
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		9.4	0.029	0.6	0.53	0.11	0.02	0.0043	0.34	0.078
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		4	0.04	0.39	0.66	0.085	0.049	0.0099	0.23	0.23
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0016	<0.0015	<0.0016	<0.0017	*<0.0015*	<0.0015	*<0.0017*	<0.0016	<0.0017
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		<0.00093	0.008	<0.00089	0.011	0.012	0.014	<0.00095	0.013	0.044
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		9.8	0.061	0.61	0.79	0.12	0.019	0.0047	0.36	0.088
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		32	<0.00064	0.11	0.93	0.14	0.0037	<0.00072	0.24	0.0026 J
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.00058	<0.00053	<0.00056	<0.0006	<0.00054	<0.00054	<0.0006	<0.00056	<0.00061
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		66	0.069	2.1	1.2	0.28	0.02	0.0044	1.5	0.4
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		51	0.0088	0.19	0.97	0.19	0.013	0.0045	0.5	0.0085
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		33	<0.00064	0.1	3.7	0.25	0.0047	0.0043	0.0066	0.0041
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0019	<0.0017	<0.0018	<0.0019	<0.0017	<0.0017	<0.0019	<0.0018	<0.002
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0013	<0.0012	<0.0012	<0.0013	<0.0012	<0.0012	<0.0013	<0.0012	<0.0014
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		*<0.0028*	0.013	*0.055*	*0.056*	*0.059*	0.018	<0.0029	*0.045*	0.018
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		100	0.014	0.94	1.3	0.61	0.012	0.02	1.6	0.071
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		<0.002	0.0029 J	0.011	0.025	0.022	0.0046 J	<0.002	0.01	0.0048 J
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		55	0.068	1.6	1.2	0.22	0.023	0.0068	1.5	0.35

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-165	SB-166	SB-167	SB-168	SB-169	SB-170	SB-171	SB-172
					Sample Date	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/28/2015	4/29/2015	4/29/2015
					Sample Interval	0-3	0-3	0-2.5	0-1	2.5-5	0-1	2.5-5	0-2.5
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		12.5	1.77	1.22	1.37	1.02	3.66	5.72	1.37
Lead		6020	1.60E+03	2.75E+02		61.9	16.1	6.92	9.75	26.6	37.2	58.9	15.3
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.00074	<0.00083	<0.00081	<0.023	<0.00079	<0.00079	<0.00084	<0.00082
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.00095	<0.0011	<0.001	<0.03	<0.001	0.0046 J	<0.0011	<0.0011
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.0014	<0.0015	<0.0015	<0.043	<0.0015	<0.0015	<0.0016	<0.0015
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0016	<0.0018	<0.0017	<0.05	<0.0017	<0.0017	<0.0018	<0.0018
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0011	<0.0012	<0.0012	<0.033	<0.0011	<0.0011	<0.0012	<0.0012
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		0.03	<0.0012	0.0021 J	0.12	0.032	0.024	0.0039 J	<0.0012
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0015	<0.0017	<0.0016	<0.046	<0.0016	<0.0016	<0.0017	<0.0016
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0022	<0.0025	<0.0024	<0.07	<0.0024	0.009 J	<0.0025	<0.0025
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		0.017	<0.00059	0.0071	0.61	0.076	0.29	0.0056	0.0043
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.19	<0.00059	0.006	0.88	0.018	0.21	0.019	0.033
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		0.44	0.013	0.012	1.5	0.13	2.7	0.07	0.069
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.13	0.0074	0.0069	0.82	0.031	4.7	0.022	0.01
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		0.14	0.0066	0.0042	1.7	0.042	3.6	0.16	0.082
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0015	<0.0017	<0.0016	<0.046	<0.0016	<0.0016	<0.0017	<0.0016
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.029	0.0037 J	0.0022 J	<0.026	0.0047 J	<0.0009	0.0033 J	<0.00093
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		0.12	0.0082	0.0061	0.94	0.074	6	0.082	0.049
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		0.014	<0.00071	0.0054	0.24	0.05	0.083	0.0047	<0.0007
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.00053	<0.00059	<0.00058	<0.017	0.0024 J	<0.00057	<0.0006	<0.00058
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.28	0.011	0.031	4.1	0.27	12	0.045	0.041
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.028	<0.0015	0.0093	0.43	0.091	0.25	0.0088	<0.0015
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		0.11	<0.00071	0.004	0.12	0.037	0.029	0.012	0.0083
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0017	<0.0019	<0.0018	<0.053	<0.0018	<0.0018	<0.0019	<0.0019
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0012	<0.0013	<0.0013	<0.036	<0.0012	<0.0012	<0.0013	<0.0013
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		0.8	<0.0028	<0.0028	<0.079	<0.0027	0.028	<0.0029	<0.0028
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.094	0.0076	0.058	2.9	0.32	4.6	0.024	0.011
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		0.025	<0.002	<0.002	<0.056	<0.0019	0.017	<0.002	<0.002
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.31	0.011	0.024	4.8	0.19	10	0.043	0.039

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-173	SB-174	SB-174	SB-175	SB-176	SB-177	SB-178	SB-179
					Sample Date	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015
					Sample Interval	0-3	4-5	4-5	4-5	0-2	2.5-5	2.5-5	0-2
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		3.71	1.43 J	13.3 J	3.26	19.7	1.21	0.748	12.5
Lead		6020	1.60E+03	2.75E+02		9.58	8.03 J	0.159 J	64.5	66.4	7.34	5.37	94.8
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.00076	<0.00086	<0.00084	<0.00084	<0.00074	<0.00082	<0.00081	<0.00079
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.00098	<0.0011	<0.0011	0.0047 J	0.02	<0.0011	<0.001	0.025
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.0014	<0.0016	<0.0016	<0.0016	<0.0014	<0.0015	<0.0015	<0.0015
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0016	<0.0018	<0.0018	<0.0018	<0.0016	<0.0018	<0.0017	<0.0017
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0011	<0.0012	<0.0012	<0.0012	<0.0011	<0.0012	<0.0012	<0.0011
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		<0.0011	<0.0012	<0.0012	0.0074	0.84	<0.0012	0.0052	0.082
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0015	<0.0017	<0.0017	<0.0017	<0.0015	<0.0016	<0.0016	<0.0016
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0023	<0.0026	<0.0025	<0.0025	<0.0022	<0.0025	<0.0024	<0.0024
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		0.0022 J	<0.00061	<0.0006	0.0054	11	<0.00059	0.0086	0.051
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.022	<0.00061	<0.0006	0.051	0.63	<0.00059	0.0083	0.89
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		0.05	<0.00073	<0.00072	0.11	45	<0.00071	0.011	1.8
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.017	<0.00049	<0.00048	0.078	6.7	0.0049	<0.00046	1.2
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		0.026	0.0067 J	0.0021 J	0.094	1.7	0.0053	<0.00069	1.7
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0015	<0.0017	<0.0017	<0.0017	<0.0015	<0.0016	<0.0016	<0.0016
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.0028 J	0.014 J	0.0033 J	0.0072 J	<0.00084	0.0041 J	<0.00092	<0.00091
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		0.039	0.0033 J	<0.00084	0.13	7.1	0.0064	<0.00081	0.25
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		0.0021 J	<0.00073	<0.00072	0.0076	7.1	<0.00071	0.0018 J	0.045
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		0.0012 J	<0.00061	<0.0006	<0.0006	<0.00053	<0.00059	0.0018 J	<0.00057
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.037	<0.00049	<0.00048	0.2	49	0.012	0.0064	0.59
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.0052	<0.0016	<0.0016	0.01	14	<0.0015	0.0039	0.1
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		0.0044	<0.00073	<0.00072	0.02	0.22	<0.00071	0.031	0.27
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0017	<0.002	<0.0019	<0.0019	<0.0017	<0.0019	<0.0018	<0.0018
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0012	<0.0013	<0.0013	<0.0013	<0.0012	<0.0013	<0.0013	<0.0012
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		0.011	<0.0029	<0.0029	0.024	1	<0.0028	<0.0028	0.79
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.0091	<0.00073	<0.00072	0.062	47	<0.00071	0.0026 J	0.14
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		<0.0019	<0.0021	<0.002	0.0051 J	0.032	<0.002	0.0023 J	0.043
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.038	<0.00061	<0.0006	0.23	32	0.008	0.0087	0.81

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-180	SB-181	SB-182	SB-182	SB-183	SB-184	SB-185	SB-186
					Sample Date	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	2015/04/29	4/29/2015
					Sample Interval	0-1.5	0-1.5	0-3	0-3	2.5-4	0-3	0-2.5	2.5-5
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		19.2	32	0.839	1.25 J	19.7 J	2.28	3.9	0.979
Lead		6020	1.60E+03	2.75E+02		131	109	7.23	7.67 J	118 J	8.42	13.5	14.9
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.00073	<0.00075	<0.00083	<0.00084	<0.00084	<0.00084	<0.00083	<0.00087
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		0.005 J	0.005 J	0.0024 J	<0.0011	<0.0011	<0.0011	0.0031 J	<0.0011
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.0014	<0.0014	<0.0015	<0.0016	<0.0016	<0.0016	<0.0015	<0.0016
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0016	<0.0016	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0019
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.001	<0.0011	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		0.018	0.015	0.0062	<0.011	0.0034 J	<0.0012	0.0044	<0.0012
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0015	<0.0015	<0.0017	<0.016	<0.0017	<0.0017	<0.0017	<0.0017
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0022	<0.0023	<0.0025	<0.024	<0.0025	<0.0025	<0.0025	<0.0026
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		0.0095	0.01	0.21	0.83 J	0.0083 J	0.003 J	0.0081	<0.00062
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.26	0.19	1.1	1.9 J	0.048 J	0.035	0.14	0.034
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		0.37	0.31	0.71	1.1 J	0.11 J	0.033	0.2	0.033
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.2	0.13	5.3	11 J	0.096 J	0.016	1.3	0.098
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		0.18	0.066	3.4	8.1 J	0.13 J	0.055	0.83	0.12
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0015	<0.0015	<0.0017	<0.016	<0.0017	<0.0017	<0.0017	<0.0017
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.038	1.4	0.037	<0.0091	0.025 J	0.0046 J	0.011	0.0052 J
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		0.3	0.29	7	13 J	0.18 J	0.023	2.2	0.14
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		0.013	0.014	0.03	0.091 J	0.0044 J	<0.00072	0.0085	<0.00074
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.00052	0.0071	<0.00059	<0.0057	0.0021 J	<0.0006	<0.00059	<0.00062
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.26	0.26	24	47 J	0.22 J	0.01	3.9	0.048
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.025	0.018	0.063	0.16 J	0.019 J	0.0099	0.022	0.0031 J
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		0.018	0.02	0.013	<0.0068	0.0059	<0.00072	0.012	0.0045
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0017	<0.0017	<0.0019	<0.018	<0.0019	<0.0019	<0.0019	<0.002
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0012	<0.0012	<0.0013	<0.012	<0.0013	<0.0013	<0.0013	<0.0014
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		0.047	0.14	0.044	<0.027	0.014 J	<0.0029	<0.0029	<0.003
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.067	0.082	0.63	0.66 J	0.13 J	0.0063	0.084	<0.00074
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		0.066	0.014	0.033	<0.019	0.0032 J	0.0048 J	0.045	0.0037 J
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.34	0.28	15	25 J	0.24 J	0.017	3.9	0.13

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-187	SB-188	SB-189	SB-190	SB-191	SB-192	SB-193	SB-194
					Sample Date	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015
					Sample Interval	2.5-4	2.5-4	2.5-5	5-Apr	0-3	0-1.5	0-1.5	0-2
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		0.562	1.07	0.707	1.05	1.47	25.1	38	3.44
Lead		6020	1.60E+03	2.75E+02		7.83	5.67	6.47	7.28	25.6	141	196	74.4
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.00082	<0.00084	<0.00083	<0.0087	<0.00084	<0.00082	<0.00082	<0.00086
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.0011	<0.0011	<0.0011	<0.011	<0.0011	<0.001	<0.0011	<0.0011
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.0015	<0.0016	<0.0015	<0.016	<0.0016	<0.0015	<0.0015	<0.0016
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0018	<0.0018	<0.0018	<0.019	<0.0018	<0.0017	<0.0018	<0.0018
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0012	<0.0012	<0.0012	<0.012	<0.0012	<0.0012	<0.0012	<0.0012
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		<0.0012	<0.0012	<0.0012	0.056	0.0048	<0.0012	0.0032 J	<0.0012
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0016	<0.0017	<0.0017	<0.017	<0.0017	<0.0016	<0.0016	<0.0017
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0025	<0.0025	<0.0025	<0.026	<0.0025	<0.0024	<0.0025	<0.0026
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		<0.00059	<0.0006	<0.00059	0.13	0.0063	<0.00058	0.0031 J	0.0014 J
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		<0.00059	0.016	0.0064	0.79	0.3	0.005	0.035	0.041
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		<0.00071	0.0051	0.0056	0.8	0.29	0.0078	0.051	0.068
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		<0.00047	0.076	0.0039 J	3.5	0.25	0.0074	0.048	0.034
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		<0.00071	0.085	0.011	2.2	0.8	0.0093	0.063	0.073
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0016	<0.0017	<0.0017	<0.017	<0.0017	<0.0016	<0.0016	<0.0017
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.0024 J	0.0057 J	0.002 J	<0.0099	0.047	0.0048 J	0.011	0.016
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		<0.00082	0.1	0.009	6.4	0.51	0.01	0.077	0.057
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		<0.00071	<0.00072	<0.00071	0.76	0.0038 J	<0.0007	0.0028 J	<0.00074
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.00059	<0.0006	0.001 J	<0.0062	<0.0006	<0.00058	<0.00058	0.024
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		<0.00047	0.036	0.0018 J	33	0.11	0.012	0.08	0.059
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		<0.0015	<0.0016	<0.0015	0.29	0.032	<0.0015	0.0036 J	0.006
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		<0.00071	<0.00072	<0.00071	0.17	0.0079	<0.0007	0.0042	<0.00074
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0019	<0.0019	<0.0019	<0.02	<0.0019	<0.0019	<0.0019	<0.002
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0013	<0.0013	<0.0013	<0.014	<0.0013	<0.0013	<0.0013	<0.0014
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		<0.0028	<0.0029	<0.0028	<0.03	0.0054 J	<0.0028	0.0035 J	<0.0029
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		<0.00071	0.015	0.0012 J	28	0.02	0.0039	0.033	0.014
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		<0.002	0.0024 J	<0.002	<0.021	0.07	<0.002	0.0028 J	<0.0021
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		<0.00059	0.084	0.0037 J	21	0.28	0.014	0.081	0.064

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-195	SB-196	SB-197	SB-198	SB-199	SB-200	SB-201	SB-201
					Sample Date	4/29/2015	4/29/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015
					Sample Interval	0-2	0-2	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		1.98	10.1	1.15	1.12	1.55	1.36	0.758	0.661
Lead		6020	1.60E+03	2.75E+02		12.9	29.9	16.5	21.5	16.8	17.6	23.6	34.5
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.0008	<0.00085	<0.0012	<0.0012	<0.0012	<0.0012	<0.0013	<0.0012
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.001	<0.0011	<0.0036	<0.0035	<0.0035	<0.0036	<0.0038	<0.0036
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.0015	<0.0016	<0.00098	<0.00097	<0.00096	<0.00098	<0.001	<0.00098
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0017	<0.0018	<0.0036	<0.0035	<0.0035	<0.0036	<0.0038	<0.0036
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0011	<0.0012	<0.0014	<0.0014	<0.0014	<0.0014	<0.0015	<0.0014
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		<0.0011	<0.0012	<0.00054	<0.00054	0.0019 J	<0.00055	<0.00058	<0.00055
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0016	<0.0017	<0.0023	<0.0023	<0.0022	<0.0023	<0.0024	<0.0023
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0024	<0.0026	<0.0021	<0.002	<0.002	<0.0021	<0.0022	<0.0021
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		<0.00057	<0.00061	<0.002	<0.0019	<0.0019	<0.002	<0.0021	0.0059 J
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.042	0.017	0.0083	0.0037	0.076	0.022	<0.0012	0.015 J
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		0.053	0.032	0.011	0.0059	0.065	0.033	<0.00058	0.0092 J
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.068	0.023	0.0095	0.0056	0.044	0.087	<0.0018	<0.0018
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		0.063	0.028	0.014	0.008	0.21	0.075	0.0043 J	<0.0011
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.0016	<0.0017	<0.00098	<0.00097	<0.00096	<0.00098	<0.001	<0.00098
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.014	0.0027 J	0.0063 J	0.0087	0.0077	0.0038 J	0.0049 J	0.0023 J
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		0.079	0.025	0.015	0.0082	0.084	0.1	<0.00092	<0.00088
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		<0.00069	<0.00073	<0.00076	<0.00075	0.0027 J	<0.00076	<0.00081	<0.00077
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.00057	<0.00061	<0.0013	0.0019 J	0.0022 J	<0.0013	<0.0014	<0.0013
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.052	0.016	0.018	0.0077	0.041	0.098	<0.0013	0.0087 J
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.015	0.0064	<0.0012	<0.0012	0.0059	<0.0012	<0.0013	0.015 J
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		<0.00069	<0.00073	<0.00065	<0.00065	0.0037	<0.00065	<0.00069	<0.00066
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.0018	<0.0019	<0.00098	<0.00097	<0.00096	<0.00098	<0.001	<0.00098
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.0013	<0.0013	<0.00076	<0.00075	<0.00075	<0.00076	<0.00081	<0.00077
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		<0.0028	<0.0029	<0.0036	<0.0035	<0.0035	<0.0036	<0.0038	<0.0036
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.013	<0.00073	0.0065	0.0045	0.012	0.004	<0.0017	<0.0016
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		0.0064 J	<0.0021	0.0021 J	0.0025 J	0.0095	0.0045 J	<0.0013	<0.0012
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.054	0.025	0.019	0.0081	0.074	0.13	<0.00069	0.0043 J

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-202	SB-203	SB-204	SB-205	SB-206	SB-207	SB-208	SB-209
					Sample Date	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015	8/6/2015
					Sample Interval	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5	0-2.5
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals													
Arsenic		6020	2.00E+02	5.90E+00		2.49	2.92	2.73	2.36	1.95	1.62	2.52	0.703
Lead		6020	1.60E+03	2.75E+02		10.5	15.4	12	10.2	9.12	8.97	14.5	7.1
SVOCs (EPA Method 8270)													
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.0036	<0.0036	<0.0037	<0.0036	<0.0037	<0.0036	<0.0036	<0.0036
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.00098	<0.00098	<0.001	<0.00098	<0.001	<0.00098	<0.00098	<0.00097
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0036	<0.0036	<0.0037	<0.0036	<0.0037	<0.0036	<0.0036	<0.0036
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0014	<0.0014	<0.0015	<0.0014	<0.0015	<0.0014	<0.0014	<0.0014
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		0.0018 J	0.12	<0.00056	<0.00055	<0.00056	<0.00054	0.0074	0.0024 J
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0023	<0.0023	<0.0024	<0.0023	<0.0024	<0.0023	<0.0023	<0.0023
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.002
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		<0.002	0.16	<0.002	0.0092	0.0034 J	<0.002	0.0067	<0.0019
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		0.011	0.32	0.036	0.43	0.065	0.087	0.2	0.042
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		0.017	0.35	0.029	0.35	0.041	0.052	0.19	0.038
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.014	0.11	0.017	0.11	0.21	0.025	0.18	0.015
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		0.016	0.52	0.057	0.99	0.14	0.13	0.36	0.1
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.00098	<0.00098	<0.001	<0.00098	<0.001	<0.00098	<0.00098	<0.00097
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.0035 J	0.0099	0.0048 J	0.011	0.0048 J	0.0066 J	0.012	0.0067 J
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		0.018	0.2	0.032	0.23	0.23	0.046	0.28	0.036
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		0.0034 J	0.15	<0.00078	<0.00077	<0.00078	<0.00076	0.011	0.0032 J
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.0013	<0.0013	0.0022 J	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.023	0.38	0.01	0.026	1.2	0.037	0.33	0.027
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.0059	0.12	0.0076	0.033	0.01	0.012	0.018	0.0069
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		<0.00065	0.081	<0.00067	<0.00066	<0.00067	<0.00065	0.017	0.0082
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.00098	<0.00098	<0.001	<0.00098	<0.001	<0.00098	<0.00098	<0.00097
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.00076	<0.00076	<0.00078	<0.00077	<0.00078	<0.00076	<0.00076	<0.00075
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		<0.0036	0.056	<0.0037	<0.0036	<0.0037	<0.0036	0.0057 J	<0.0036
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.016	0.74	0.0047	0.005	0.0045	0.0054	0.054	0.011
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		<0.0012	0.022	0.0042 J	0.021	0.0034 J	0.0041 J	0.016	0.0037 J
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.022	0.34	0.026	0.14	0.47	0.052	0.35	0.044

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

Table 4-3
SUMMARY OF SURFACE SOIL SAMPLING RESULTS
UPRR Houston Wood Preserving Works

					Sample Location	SB-210	SB-211
					Sample Date	2015/08/06	8/6/2015
					Sample Interval	0-2.5	0-1
Constituent	CAS	Method	cPCL	RAL		mg/Kg	mg/Kg
Metals							
Arsenic		6020	2.00E+02	5.90E+00		2.68	4.84
Lead		6020	1.60E+03	2.75E+02		9.67	22.4
SVOCs (EPA Method 8270)							
1,2-Diphenylhydrazine	122-66-7	8270C_LL	5.09E-01	2.27E-01		<0.0012	<0.0012
2,4-Dimethylphenol	105-67-9	8270C_LL	5.27E+01	1.77E+01		<0.0036	0.0086
2,4-Dinitrotoluene	121-14-2	8270C_LL	4.89E-02	2.18E-02		<0.00098	<0.00098
2,6-Dinitrotoluene	606-20-2	8270C_LL	4.02E-02	1.79E-02		<0.0036	<0.0036
2-Chloronaphthalene	91-58-7	8270C_LL	1.49E+04	4.99E+03		<0.0014	<0.0014
2-Methylnaphthalene	91-57-6	8270C_LL	3.78E+02	1.27E+02		0.014	0.0038
4,6-Dinitro-2-methylphenol	534-52-1	8270C_LL	7.00E-03	2.34E-03		<0.0023	<0.0023
4-Nitrophenol	100-02-7	8270C_LL	2.65E-01	8.89E-02		<0.0021	<0.0021
Acenaphthene	83-32-9	8270C_LL	5.23E+03	1.75E+03		0.057	0.017
Acenaphthylene	208-96-8	8270C_LL	9.09E+03	3.05E+03		2.2	0.25
Anthracene	120-12-7	8270C_LL	1.03E+04	3.44E+03		1.2	0.33
Benzo[a]anthracene	56-55-3	8270C_LL	2.36E+01	5.65E+00		0.19	0.15
Benzo[a]pyrene	50-32-8	8270C_LL	2.37E+00	5.64E-01		5.3	0.56
Bis(2-chloroethoxy)methane	111-91-1	8270C_LL	1.73E-01	7.70E-02		<0.00098	<0.00098
Bis(2-ethylhexyl) phthalate	117-81-7	8270C_LL	5.63E+02	4.32E+01		0.049	0.021
Chrysene	218-01-9	8270C_LL	2.36E+03	5.60E+02		1.2	0.26
Dibenzofuran	132-64-9	8270C_LL	7.44E+02	2.49E+02		0.022	0.0067
Di-n-butyl phthalate	84-74-2	8270C_LL	1.62E+04	4.40E+03		<0.0013	<0.0013
Fluoranthene	206-44-0	8270C_LL	2.48E+04	2.32E+03		0.18	0.21
Fluorene	86-73-7	8270C_LL	6.65E+03	2.23E+03		0.19	0.054
Naphthalene	91-20-3	8270C_LL	1.90E+02	1.24E+02		0.022	0.0059
Nitrobenzene	98-95-3	8270C_LL	1.48E+00	4.94E-01		<0.00098	<0.00098
N-Nitrosodiphenylamine	86-30-6	8270C_LL	4.18E+01	1.87E+01		<0.00076	<0.00076
Pentachlorophenol	87-86-5	8270C_LL	1.24E-01	1.24E-01		0.061	<0.0036
Phenanthrene	85-01-8	8270C_LL	9.28E+03	1.71E+03		0.028	0.041
Phenol	108-95-2	8270C_LL	1.33E+02	4.46E+01		0.12	0.027
Pyrene	129-00-0	8270C_LL	1.86E+04	1.70E+03		0.36	0.27

Notes:

1. Concentrations > cPCL are highlighted in orange.
2. Concentrations > RAL are highlighted in yellow.
3. NA - Not Applicable.
4. J - Estimated Value, < - Compound not detected at the detection limit.

APPENDIX 2B

BORING LOGS (2015 SOIL INVESTIGATION)

Union Pacific Railroad

Log of Boring: SB-156

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.787307076
Sampling Method:	Macro Core	Longitude:	-95.31949881

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			2.2	FILL	Sandy, gravel FILL, tan to light brown, slightly moist, moderately dense to loose, very fine to very coarse, subrounded to angular, poorly sorted, micaceous at 1.5'.
2.0	4/4			SC	SAND, dark gray to black, slightly moist, soft, very low plasticity, fine to very fine, subrounded, well sorted, some clay.
3.0			21.1	CL	Sandy CLAY, dark gray to medium gray, moist, firm, very low plasticity, very fine to fine, well sorted, sand lenses.
4.0	1.0/1.0				Sandy CLAY, medium gray, moist, firm, low plasticity, very fine, black creosote lens.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-157

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.787132651
Sampling Method:	Macro Core	Longitude:	-95.319274096

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.0/2.0		2.0	SP	Gravelly SAND, brown to dark brown, wet grading down to slightly moist, moderately dense, no plasticity, medium to very coarse gravel, fine to medium sand, subrounded to angular, moderately sorted, rare feldspar, wood and roots present at surface.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-158

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.787090711
Sampling Method:	Macro Core	Longitude:	-95.31989951

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				CL	Sandy CLAY, medium gray, orange brown staining, moist, firm to soft, medium plasticity, very fine, strong napthalene odor.
1.0			5.3	FILL	Gravelly, sandy, clayey, FILL, brown tan to brown, yellow orange staining, slightly moist, loose, very coarse to very fine, subrounded to angular, poorly sorted, micaceous, trace fossils, light odor.
2.0	2.5/4.0			SC	SAND, 3.0"-4.0" sections of alternating black and gray, moist, dense, no to very low plasticity, fine to very fine, well sorted, trace clay, light napthalene odor.
3.0				NR	No recovery.
4.0	1.0/1.0		4.3	CL	Sandy CLAY, gray, moist, firm to soft, low to very low plasticity, very fine to fine, well sorted, 0.25" black lenses.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-159

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.786998006
Sampling Method:	Macro Core	Longitude:	-95.319701294

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				FILL	Sandy, silty, gravelly, FILL, brown to dark brown, orange brown staining, wet grading to moist, loose to moderately dense, coarse to very fine, subrounded to angular, poor sorting, abundant roots and organics, trace wood, light odor.
1.0			6.6		Sandy, silty, gravelly, FILL, dark brown to tan brown, varicolored medium gray and green, moist, loose, coarse to very fine, subrounded to subangular, poor to moderately sorted, micaceous, trace shells, trace white calcareous precipitate, black at base.
2.0	2.5/4.0			SP	SAND, gray with dark gray streaks, moist, moderately dense, very fine, well sorted, black lens at 2.3', strong napthalene odor, trace silt.
3.0				NR	No recovery.
4.0	1.0/1.0		5.9	SM	SAND, gray with light gray mottling, moist, moderately dense, very low plasticity, very fine, moderately sorted, micaceous fine to very fine sand at base, moderate odor.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-160

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1.5
Logged By:	CK/FD/JB	Latitude:	29.786856007
Sampling Method:	Macro Core	Longitude:	-95.320008464

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.5/1.5		7.5	FILL	Gravelly, sandy, FILL, varicolored brown, orange brown, and gray, slightly moist, loose, very coarse to very fine, subrounded to angular, poorly sorted, moderate roots, light napthalene odor.
1.0					Sandy, gravelly, clayey, FILL, varicolored gray, brown, tan brown, orange tan, moist, moderately dense, very coarse to very fine, subrounded to angular, poorly sorted, trace roots, strong odor.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.5'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-161

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD/JB	Latitude:	29.786726744
Sampling Method:	Macro Core	Longitude:	-95.320334551

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		8.5	FILL	Sandy, gravelly, silty, FILL, brown, mottled tan yellow, dry to slightly moist, loose, very coarse to very fine, subrounded to subangular, poorly sorted, light odor.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-162

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.786832737
Sampling Method:	Macro Core	Longitude:	-95.320636024

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0			8.4	FILL	Sandy, silty, gravel FILL, light tan to dark brown, dry to moist, loose, very coarse to very fine, angular to subrounded, poorly sorted, micaceous with depth, no odor.
1.0				SM	SAND, gray to dark gray, moist, loose to dense, fine to very fine, well sorted, no odor.
2.0	3.0/4.0		4.4	CL	CLAY, dark gray with light brown mottling, moist, firm, medium plasticity, trace very fine sand.
				SC	SAND, dark gray, moist, moderately dense, very low plasticity, fine to very fine, poorly sorted, trace clay.
3.0				NR	No recovery.
4.0	1.0/1.0		8.5	CL	Sandy, silty, CLAY, brown, light gray, black lenses, moist, firm to hard, medium plasticity, very fine.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-163

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD/JB	Latitude:	29.786556079
Sampling Method:	Macro Core	Longitude:	-95.320935692

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		1.8	FILL	Gravel FILL, varicolored brown, light tan to gray brown, wet, loost, very coarse to fine, top 1.0" - sandy silt, pieces of wood, and moderate roots, sandy gravel at base, moderate odor.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-164

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD/JB	Latitude:	29.786461388
Sampling Method:	Macro Core	Longitude:	-95.321321535

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		3.4	FILL	Silty, sandy, gravel, FILL, brown to gray brown, trace yellow orange staining, moist, loose, very coarse to very fine, subangular to angular, moderate roots, light odor.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-165

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	3
Logged By:	CK/FD/JB	Latitude:	29.786296714
Sampling Method:	Macro Core	Longitude:	-95.321425462

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	3.0/3.0		3.3	FILL	Gravelly, clayey, sandy, FILL, brown, dry, loose, very coarse to very fine, rounded to angular, poorly sorted.
1.0				GC	Gravelly CLAY, gray to gray brown, trace black, slightly moist, moderately dense, very low to no plasticity, very coarse to very fine, subrounded to angular, poorly sorted, trace sand.
2.0				SW	Gravelly SAND, light gray to dark gray, dry, loose, coarse to very fine, subrounded to angular, poorly sorted.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-166

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.786024455
Sampling Method:	Macro Core	Longitude:	-95.321501323

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			2.8	FILL	Gravelly, sandy, clayey, silty, FILL, varicolored orange brown, brown, tan, dark brown, and light tan, moist, loose to moderately dense, very low to no plasticity, coarse to very fine, subrounded to subangular, poorly sorted.
2.0	3.0/4.0			SM	SAND, varicolored tan, light brown, gray, and dark gray, moist, loose, fine, well sorted, 2.1'-2.3' lens of medium to coarse grained sand.
				CL	Sandy CLAY, dark gray, moist, soft, low plasticity, very fine to fine, very low odor.
3.0				NR	No recovery.
4.0				CL	Silty, sandy, CLAY, dark gray, very moist, soft, low plasticity, very fine.
	1.0/1.0		2.4	SM	SAND, brown, tan, wet, loose, coarse to very fine, subrounded to rounded, moderately to poorly sorted.
				CL	Sandy, silty, CLAY, gray to dark gray, wet, very soft, medium plasticity, very fine.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-167

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.785793797
Sampling Method:	Macro Core	Longitude:	-95.321373463

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			2.3	FILL	Clayey, silty, sandy, gravelly, FILL, varicolored gray, brown orange, brown, tan, and dark brown, wet to moist, moderately dense grading to loose becoming moderately dense then loose, low to no plasticity becoming no plasticity, very coarse to very fine, rounded to angular, poor sorting.
2.0	2.5/4.0			SM	SAND, dark brown, dark gray, moist, loose becoming slightly dense, very low plasticty, fine to very fine sand, rounded, micaceous to 2.0', trace clay near 2.5'.
3.0				NR	No recovery.
4.0				CL	Sandy CLAY, dark gray, dark brown, moist, soft, low plasticity, very fine to fine.
	1.0/1.0		1.5	SP	SAND, gray to dark gray, orange brown staining, moist, loose to slightly dense, fine to very fine, subrounded, poorly to moderately sorted, trace calcareous precipitate at 4.3'.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-168

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD/JB	Latitude:	29.786095517
Sampling Method:	Macro Core	Longitude:	-95.321986755

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		1.3	FILL	Clay, sand, silt, gravel, FILL, dark gray to black, wet, loose, very coarse to very fine, angular to subrounded, poorly sorted, abundant roots and wood, possible hydrocarbon sheen, trace to moderate odor.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-169

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.785471295
Sampling Method:	Macro Core	Longitude:	-95.321903869

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		1.6	FILL	Clayey, gravel FILL, gray brown, very moist, very soft, medium plasticty, coarse to fine, subangular to rounded, moderately sorted.
				SW	Gravelly SAND, tan brown, very moist, loose, fine to very fine sand, coarse to medium gravel, subrounded, poorly sorted, gravel decreases with depth, black lens at 0.8'.
1.0				NR	No recovery.
2.0					
3.0	2.5/4.0		6.7	SW	SAND, tan, brown, wet, loose, coarse to very fine, rounded to subangular, poorly sorted,
4.0				SC	Clayey SAND, gray tan, wet, soft, low to very low plasticity, coarse to fine, rounded to subangular, poorly sorted, trace creosote at 4.5', moderate odor.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-170

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/28/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Clay Neal	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD/JB	Latitude:	29.785671693
Sampling Method:	Macro Core	Longitude:	-95.322164108

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		3.1	FILL	Silty, sandy, gravelly, FILL, brown to tan brown, moist, loose, no plasticity, very coarse to fine, angular to subrounded, trace clay, trace roots.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-171

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.785759262
Sampling Method:	Macro Core	Longitude:	-95.322578083

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			1.9	FILL	Sandy, silty, gravel FILL, tan brown to dark brown, moist, loose, very coarse to very fine, subrouned to subangular, poorly sorted.
2.0	4.0/4.0				
3.0			2.7	SP	SAND, dark brown, moist, loose to slightly dense, moderate to very fine, subrounded, moderately sorted, black to dark gray lens near top, moderate sand lens near 3.4'.
4.0	1.0/1.0			CL	Sandy CLAY, gray, moist, soft, low plasticity, very fine.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-172

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.78528156
Sampling Method:	Macro Core	Longitude:	-95.322408052

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				FILL	Gravel, sand, silt, clay, FILL, varicolored brown, tan brown, dark gray, black, orange brown staining, wet to moist, loose to slightly dense, no to very low plasticity, coarse to very fine, subrounded to subangular, poorly sorted, trace roots.
1.0			3.1	SP	SAND, tan to brown, moist, loose, medium to fine, subrounded, moderately sorted.
2.0	2.5/4.0			CL	Sandy CLAY, gray, dark gray, moist, soft, medium plasticity, very fine.
3.0				NR	No recovery.
4.0	1.0/1.0		2.8	SC	Clayey SAND, dark gray, dark brown, wet, soft, low to medium plasticity, moderate to very fine, subrounded, poorly to moderately sorted.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-173

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784676089
Sampling Method:	Macro Core	Longitude:	-95.323623291

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	3.0/4.0		1.6	FILL	Gravel, sand, silt, FILL, brown, dark brown, orange brown staining, wet becoming moist with depth, loose, very coarse to very fine, subangular to subrounded, poorly sorted.
1.0				SM.	SAND, varicolored dark gray, orange brown, tan, moist, loose, fine to very fine, subrounded, moderately sorted.
2.0				CL	Sandy, silty, CLAY, dark gray, moist, firm, medium plasticity, very fine.
3.0				NR	No recovery.
4.0	1.0/1.0		1.3	CL	Sandy CLAY, dark gray, brown gray, wet, very soft, low to medium plasticity, very fine, trace wood.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-174

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.78455653
Sampling Method:	Macro Core	Longitude:	-95.323735839

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0			1.5	FILL	Silt, sand, gravel, FILL, brown to dark brown, trace orange brown, wet, loose to slightly dense, very coarse to very fine, angular to subangular, poorly sorted, trace clay.
1.0					
2.0	0.5/4.0			NR	No recovery.
3.0					
4.0	1.0/1.0		1.7	CL	Sandy CLAY, dark gray to light gray, wet to moist, hard, medium to high plasticity, trace coarse gravel, angular to subangular.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Field Duplicate - FD01

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-175

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784587379
Sampling Method:	Macro Core	Longitude:	-95.32386608

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				FILL	Sand, gravel, silt, clay, FILL, varicolored dark brown, black, dark gray to light gray, moist, loose to slightly dense, very coarse to very fine, subangular to subrounded, poorly sorted, trace roots.
1.0			2.5		
2.0	3.0/4.0			SC	Clayey SAND, dark gray, moist, firm to moderately firm, very low plasticity, very fine.
				CL	Sandy CLAY, dark gray, moist, firm, medium plasticity, very fine.
3.0				NR	No recovery.
4.0				SC	Clayey SAND, black to dark gray, moist, soft, very low plasticity, fine to very fine.
	1.0/1.0		3.2	CL	Sandy CLAY, dark gray, wet, firm, medium plasticity, very fine.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-176

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.78452458
Sampling Method:	Macro Core	Longitude:	-95.324086173

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.0/2.0		3.6	FILL	Sand, silt, gravel, FILL, brown to tan brown, moist, loose, very coarse to very fine, angular to subrounded, poorly sorted, abundant roots.
				SM	Clayey SAND, black, moist, soft, low to very low plasticity, very fine, moderately sorted, moderate to strong odor.
2.0				SP	SAND, tan to tan brown, moist, loose, medium to very fine, subrounded, moderate sorting.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-177

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784513734
Sampling Method:	Macro Core	Longitude:	-95.323569287

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	5.0/5.0		2.0	FILL	Gravel, sand, silt, FILL, brown to light brown, gray, slightly moist, loose, very coarse to very fine, angular to subrounded, poorly sorted.
1.0					
2.0				SP	SAND, tan, moist, loose, fine to very fine, moderately to well sorted, clean.
				SC	Clayey SAND, gray to dark gray, moist, soft, fine to very fine.
3.0			3.4		
4.0				CL	Sandy, silty, CLAY, gray to dark gray, moist, soft, very fine.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-178

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784402625
Sampling Method:	Macro Core	Longitude:	-95.323815859

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				FILL	Gravel, sand, silt, FILL, brown to light brown, gray, moist, loose to slightly dense, very coarse to very fine, angular to subrounded, poorly sorted.
1.0			3.8		
2.0	5.0/5.0			SP	SAND, light tan to brown, moist, loose, fine to very fine, subrounded, moderately to well sorted, clean.
3.0					
4.0			4.1	CL	Sandy, silty, CLAY, gray, moist, firm to hard, medium plasticity, very fine, trace odor.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-179

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.784349188
Sampling Method:	Macro Core	Longitude:	-95.323964935

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	2.0/2.0		1.6	FILL	Gravel, silt, sand, FILL, dark brown, moist, loose, very coarse, subangular to subrounded, poorly sorted.
1.0				SM	Silty SAND, black to dark gray, moist, loose, fine to very fine, subrounded, moderately sorted.
2.0				SP	SAND, tan, moist, loose, fine to very fine, moderately to well sorted, clean.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-180

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1.5
Logged By:	CK/FD/JB	Latitude:	29.78426993
Sampling Method:	Macro Core	Longitude:	-95.324157254

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.5/1.5		3.9	FILL	Silt, sand, gravel, FILL, brown to dark brown, moist, loose, very coarse to very fine, subangular to subrounded, poorly sorted.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.5'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-181

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1.5
Logged By:	CK/FD/JB	Latitude:	29.78436514
Sampling Method:	Macro Core	Longitude:	-95.32418055

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.5/1.5		0.4	FILL	Sandy gravel, FILL, brown to dark brown, moist, loose, very coarse, subangular to subrounded, poorly sorted.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.5'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-182

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	3
Logged By:	CK/FD/JB	Latitude:	29.784492839
Sampling Method:	Macro Core	Longitude:	-95.324514529

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					CLAY, brown, light tan, moist, soft to firm, medium plasticity, trace very fine sand, trace calcareous precipitate.
1.0	3.0/3.0		5.6	CL	Silty CLAY, gray, dark gray, streaks of black, moist, soft to firm, medium plasticity, trace wood, light odor.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
No recovery past 3.0'.
Field Duplicate - FD02

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-183

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	4
Logged By:	CK/FD/JB	Latitude:	29.784154318
Sampling Method:	Macro Core	Longitude:	-95.324474762

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	4.0/4.0		4.8	FILL	Sand and silt with gravel, FILL, brown, dark brown, moist, loose, very low to no plasticity, very coarse to very fine, angular to subrounded, poorly sorted.
1.0					
2.0					
3.0			5.2	CL	Sandy, silty, CLAY, dark brown gray, wet, soft, medium plasticty, fine to very fine, subrounded.
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 4.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-184

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.78422187
Sampling Method:	Macro Core	Longitude:	-95.324875875

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			6.9	CL	Silty CLAY, gray, varicolored tan, yellow tan, light tan, moist, soft, medium plasticity, trace medium to coarse gravel, subrounded.
2.0	3.0/4.0				CLAY, gray to dark gray, orange brown staining, moist, soft, medium plasticity, moderate to trace fine to very fine sand.
3.0				NR	No recovery.
4.0	1.0/1.0		4.8	CL	CLAY, gray to dark gray, orange brown staininng, yellow brown, moist, soft grading to firm, medium plasticity.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-185

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784278787
Sampling Method:	Macro Core	Longitude:	-95.324941789

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			5.0		CLAY, varicolored light brown, tan brown, yellow tan, moist, firm, medium plasticity, trace medium gravel, subrounded.
2.0	4.0/4.0			CL	
3.0					CLAY, gray to dark gray, orange brown staining, moist, firm grading down to hard, medium becoming medium hard and then medium plasticity, trace very fine sand.
4.0			4.0		
	1.0/1.0				
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-186

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.78426519
Sampling Method:	Macro Core	Longitude:	-95.325178423

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			1.7		
2.0					
	5.0/5.0			CL	Sandy CLAY, dark gray to gray, orange brown staining, streaks of black near 2.5', wet near surface then moist, very soft becoming firm with depth, medium plasticity, very fine.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-187

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	4.5
Logged By:	CK/FD/JB	Latitude:	29.784258359
Sampling Method:	Macro Core	Longitude:	-95.32530418

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	4.5/4.5		3.1	CL	Sandy CLAY, dark gray, orange brown staining, moist, soft becoming firm, medium to high plasticity, very fine.
1.0					
2.0					
3.0			4.3		
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 4.5'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-188

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784205377
Sampling Method:	Macro Core	Longitude:	-95.325320173

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				SC	Clayey SAND, dark gray, moist, soft, low plasticity, very fine.
1.0			0.7		
2.0	5.0/5.0			CL	Sandy CLAY, dark gray with black streaks, yellow orange and orange brown staining with depth, black streaks between 4.0'-5.0', moist, soft becoming firm, medium plasticity, very fine.
3.0					
4.0			3.6		
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-189

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.784005591
Sampling Method:	Macro Core	Longitude:	-95.32505897

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			4.2		
2.0	4.0/4.0			CL	Silty CLAY, gray to dark gray, yellow orange staining, dark brown stain, trace green, yellow streaks and orange brown stain with depth, moist, firm to soft, medium plasticity, calcareous precipitate near 4.5', light odor throughout.
3.0			4.8		
4.0	1.0/1.0				
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-190

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	5
Logged By:	CK/FD/JB	Latitude:	29.783982086
Sampling Method:	Macro Core	Longitude:	-95.325182923

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0			3.9	CL	CLAY, brown to tan, yellow tan streaks, moist, soft, medium to high plasticity, trace medium to very fine sand, subrounded to subangular.
2.0	3.0/4.0				Silty CLAY, varicolored gray to dark gray, dark brown gray, orange brown staining, moist, firm, medium to low plasticity, strong odor.
3.0				NR	No recovery.
4.0	1.0/1.0		6.0	CL	Silty CLAY, dark gray to dark gray brown, black streaks, light gray with depth, yellow green streaks, moist, soft to firm, medium plasticity.
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
4/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
No recovery past 3.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-191

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	DPT
Drilling Company:	AFS	Borehole Diameter (in.):	2
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	3
Logged By:	CK/FD/JB	Latitude:	29.784001653
Sampling Method:	Macro Core	Longitude:	-95.325267743

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	3.0/3.0		5.7	CL	Silty CLAY, gray to dark gray, orange to orange brown staining, trace yellow stain, moist, firm, medium plasticity, trace very fine sand.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-192

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1.5
Logged By:	CK/FD/JB	Latitude:	29.78315508
Sampling Method:	Macro Core	Longitude:	-95.326621353

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.5/1.5		0.2	FILL	Silt, clay, rock FILL, brown, loose.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.5'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-193

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1.5
Logged By:	CK/FD/JB	Latitude:	29.783108264
Sampling Method:	Macro Core	Longitude:	-95.326718374

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.5/1.5		0.1	FILL	Silt, clay, rock FILL, brown, loose.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 1.5'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-194

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.783177797
Sampling Method:	Macro Core	Longitude:	-95.326852998

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.0/2.0		0.1	CL	Silty CLAY, brown, becoming light gray at 1.5'.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-195

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.78312164
Sampling Method:	Macro Core	Longitude:	-95.326983532

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.0/2.0		0.0	CL	Silty CLAY, brown, dry, soft to medium stiff, medium high plasticity.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-196

Houston Subdivision MP 358.8 - 359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	4/29/2015	Drilling Method:	Hand Auger
Drilling Company:	AFS	Borehole Diameter (in.):	3
Driller:	Nathan Redwine	Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2
Logged By:	CK/FD/JB	Latitude:	29.783005724
Sampling Method:	Macro Core	Longitude:	-95.327148787

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.0/2.0		0.1	CL	Silty CLAY, brown, dry, soft to medium stiff, medium high plasticity.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil placed in drum and borehole filled with bentonite.
Refusal at 2.0'.

Annular Materials

Well Materials

Union Pacific Railroad

Log of Boring: SB-197

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784798867
Sampling Method:	Hand Auger	Longitude:	-95.324603593

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					Sandy SILT, brown, dry, very fine, roots.
1.0	2.5/2.5		2.5	ML	Clayey SILT, brown, trace tan/yellow staining, dry, medium stiff.
2.0				CL	Silty CLAY, brown, trace tan/tan yellow staining, dry, medium stiff, low plasticity, trace sand.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-198

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784825735
Sampling Method:	Hand Auger	Longitude:	-95.324425169

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					Sandy SILT, brown, dry, very fine, roots.
1.0	2.5/2.5		1.7	ML	Clayey SILT with minor sand, brown, tan/yellow staining, dry, medium stiff.
2.0				CL	Silty CLAY, trace sand, brown, trace yellow tan staining, dry, medium stiff, low plasticity.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-199

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.78481097
Sampling Method:	Hand Auger	Longitude:	-95.324344145

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					Sandy SILT, brown, dry, very fine, rootlets.
1.0	2.5/2.5		0.4	ML	Clayey SILT, trace sand, brown, trace tan/yellow staining, dry, medium stiff, very fine.
2.0				CL	Silty CLAY, trace sand, brown, gray mottling, dry, medium stiff.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil cuttings replaced in borehole upon completion.

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-200

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784680196
Sampling Method:	Hand Auger	Longitude:	-95.32460968

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0 – 2.5	2.5/2.5		1.9	ML	Clayey SILT, trace sand, brown, trace yellow staining, dry, stiff, very fine, clay increases with depth.

Notes: Soil cuttings replaced in borehole upon completion.

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-201

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784669181
Sampling Method:	Hand Auger	Longitude:	-95.324449862

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	2.5/2.5		1.0	ML	SILT, trace clay, gray brown becoming light gray brown, dry.
1.0					Clayey SILT, brown, dry, stiff.
2.0				CL	Silty CLAY, trace sand stringers, yellow, yellow and gray mottling, moist, soft, high plasticity.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-202

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784660526
Sampling Method:	Hand Auger	Longitude:	-95.324346214

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					SILT, brown, dry.
					Clayey SILT, brown orange, dry, calcareous precipitate.
1.0	2.5/2.5		1.6	ML	Clayey SILT, brown orange, dry.
2.0				CL	Silty CLAY, brown, dry, hard, medium plasticity.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil cuttings replaced in borehole upon completion.

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-203

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784701325
Sampling Method:	Hand Auger	Longitude:	-95.324252596

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				CL	CLAY, red brown, dry, stiff, medium plasticity, trace calcareous precipitate, blocky.
1.0	2.5/2.5		1.5	ML	SILT, moderate very fine sand, brown, dry, very fine, moderate calcaerous precipitate.
2.0					SILT, brown, dry, hard, faint odor.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad | Log of Boring: SB-204

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784528493
Sampling Method:	Hand Auger	Longitude:	-95.324627111

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	2.5/2.5		0.8	ML	Clayey SILT with gravel, brown, dry, medium to coarse, rounded.
1.0				ML/CL	Clayey SILT, CLAY, alternating tan silt and red brown clay, dry, silt layers contain calcareous precipitate.
2.0				CL	Silty CLAY, brown to dark brown, trace yellow staining, dry, soft to firm, low plasticity.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil cuttings replaced in borehole upon completion.

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-205

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784517354
Sampling Method:	Hand Auger	Longitude:	-95.324383602

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				CL	Silty CLAY, brown red, dry.
1.0	2.5/2.5		0.8	ML	Clayey SILT, brown, dry, clay increases with depth, calcareous precipitate between 0.5' to 1.0'.
2.0				CL	Silty CLAY, brown to dark brown, slightly moist, hard.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-206

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784404885
Sampling Method:	Hand Auger	Longitude:	-95.324617358

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0				CL	Silty CLAY, red brown, dry, low plasticity, calcareous precipitate.
1.0	2.5/2.5		0.6	ML	Clayey SILT, tan, calcareous precipitate.
2.0				CL	Silty CLAY, dark brown, dry becoming slightly moist, hard becoming hard to firm, no plasticity becoming low.
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-207

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784431924
Sampling Method:	Hand Auger	Longitude:	-95.32445432

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					Gravelly silty CLAY, brown, dry, hard, gravel subrounded, minor sand, roots.
1.0	2.5/2.5		2.7	CL	Silty CLAY, brown, minor tan/yellow staining, dry hard.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-208

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784427044
Sampling Method:	Hand Auger	Longitude:	-95.324355332

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					Clayey SILT, tan, dry, calcareous precipitate.
1.0	2.5/2.5		0.5	ML	Clayey SILT, brown, dry becoming slighlty moist with depth, increasing clay with depth, mottled gray between 2.0' to 2.5'.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED PROFESSIONAL GEOSCIENTIST
12/7/15

PBW
Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-209

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784203132
Sampling Method:	Hand Auger	Longitude:	-95.324634006

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0 – 2.0	2.5/2.5		0.3	ML	Clayey SILT, brown, top 2.0" tan, pockets of light gray very fine sand between 2.0' to 2.5'.

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.

Union Pacific Railroad

Log of Boring: SB-210

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	2.5
Logged By:	CK/FD	Latitude:	29.784252448
Sampling Method:	Hand Auger	Longitude:	-95.324441076

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0					
1.0	2.5/2.5		0.1	ML	Clayey SILT, light brown, top 2.0" brown, becoming brown to dark brown at 1.0', slightly moist, calcareous precipitate.
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
12/7/15

Notes: Soil cuttings replaced in borehole upon completion.

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Union Pacific Railroad

Log of Boring: SB-211

Houston Subdivision MP 359.2-359.4
Response Action Plan
Houston, TX

PBW Project No. 1358

Completion Date:	8/6/2015	Drilling Method:	Hand Auger
Drilling Company:		Borehole Diameter (in.):	3
Driller:		Ground Elevation(ft. AMSL)	
Driller's License:		Total Depth (ft):	1
Logged By:	CK/FD	Latitude:	29.784389505
Sampling Method:	Hand Auger	Longitude:	-95.324260484

Depth (ft)	Recovery (ft/ft)	Sample Interval	PID	USCS	Lithologic Description
0.0	1.0/1.0		0.1	ML	SILT with minor clay, light brown, dry, hard.
1.0					
2.0					
3.0					
4.0					
5.0					
6.0					
7.0					
8.0					
9.0					
10.0					

PBW

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664
Tel (512) 671-3434 Fax (512) 671-3446

Notes: Soil cuttings replaced in borehole upon completion.
Refusal at 1.0'.

APPENDIX 3

STUDIES/TESTS DOCUMENTATION

3B – DNAPL Recovery Pilot Test Work Plan and 24-Month Report
3D – Request for Preliminary Review Of Area Of Contamination (AOC)

APPENDIX 3B

STUDIES/TESTS DOCUMENTATION - DNAPL RECOVERY PILOT TEST WORK PLAN AND 24-MONTH REPORT

PBW

Consulting Engineers
and Scientists

PASTOR, BEHLING & WHEELER, LLC
2201 Double Creek Drive, Suite 4004
Round Rock, TX 78664

Tel (512) 671-3434
Fax (512) 671-3446

April 10, 2015
PBW Project No. 1358

VIA EMAIL

Ms. Maureen Hatfield
MC-127
VCP-CA Section, Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: DNAPL Recovery Pilot Test – 24-Month Report (February 2013 – January 2015)
Union Pacific Railroad Houston Wood Preserving Works Facility
4910 Liberty Road Facility, Houston, Texas
Post-Closure Care Permit No. HW-50343; Industrial SWR No. 31547

Dear Ms. Hatfield:

Pastor, Behling & Wheeler, LLC (PBW), on behalf of Union Pacific Railroad Company, is providing this summary report for the 24-month dense non-aqueous phase liquid (DNAPL) recovery pilot test conducted at the Houston Wood Preserving Works Facility (the Site). As detailed in the PBW letter dated February 5, 2013, PBW proposed to conduct a 24-month DNAPL recovery pilot test at the Site consisting of monthly manual DNAPL recovery. This letter discusses the DNAPL recovery pilot test activities and results for the 24 month study that was conducted from February 2013 through January 2015.

The following monitoring wells were selected to be included in the DNAPL recovery test based on the amount of DNAPL historically observed in the wells:

Well Name	Zone	Min. DNAPL Thickness (ft.)	Max DNAPL Thickness (ft.)
MW-57A	A-TZ	4.11	4.25
MW-78A*	A-TZ	1.38	6.23
MW-12B	B-TZ	0.41	5.70
MW-32B	B-CZ	5.77	6.13
MW-33BR	B-CZ	0.30	0.30
MW-41B	B-TZ	5.06	24.14
MW-57B	B-CZ	0.44	0.50
MW-70B	B-CZ	1.44	1.53
MW-75B	B-CZ	1.84	1.90
MW-23C	C-TZ	1.13	2.30
MW-34C	C-TZ	7.24	7.60
MW-44C	C-TZ	0.75	7.10
MW-45C	C-TZ	0.39	1.50
MW-46C	C-TZ	0.10	1.25

Notes:
Average depth to water values, minimum and maximum DNAPL thicknesses based on data collected between January 2011 and December 2012, *except MW-78A which was installed in 2014 and added to the pilot test in November 2014.

Figure 1 shows the location of the wells used in the pilot study. Monitoring well MW-23C and MW-78A were added to the study in November 2014.

The pilot test procedures consisted of measuring the depth to groundwater surface, the depth to the groundwater/DNAPL interface, and the total depth of the well relative to the top of well casing prior to DNAPL recovery. Using a peristaltic pump, DNAPL was pumped from the bottom of the well until groundwater returned in the pump discharge. The volume of recovered DNAPL was estimated from each well based on the volume pumped, and the well was gauged to measure the total depth of the well and depth to residual DNAPL following pumping. Recovered DNAPL was temporarily stored at the Containment Storage Area. The most recent waste manifests for the recovered DNAPL and groundwater are provided in Attachment A.

A summary of the DNAPL recovery measurements for the 24-month period from February 2013 through January 2015 is provided on Table 1. A graph of DNAPL thicknesses prior to each monthly recovery efforts over time is presented on Figure 2. Observations from the recovery testing over the testing period, with emphasis on the last six months of the pilot test, are provided below:

- A-TZ Wells: Initially, MW-57A was the only well completed in the A-TZ Unit that contained DNAPL. For MW-57A, DNAPL thickness decreased from 4.78 feet in February 2013 to less than 1 foot thick from October 2013 through January 2015. DNAPL thicknesses have steadily decreased over the last six months from 0.86 feet to 0.39 feet. Following installation of MW-78A in May 2014 in the Englewood Intermodal Yard and detection of DNAPL in the well, MW-78A was incorporated into the pilot test starting in early November 2014. DNAPL thickness in MW-78A started out at 6.23 feet (early November 2014), and has steadily decreased to 4.06 feet (January 2015).

- B-TZ/B-CZ Wells: At the beginning of the pilot test, monitoring wells with the thickest DNAPL measurements included MW-12B and MW-41B on the west side of the Site (Figure 1). DNAPL thicknesses increased following the February 2013 recovery event in MW-12B (May 2013) and in MW-41B (June 2013). However, DNAPL thickness in well MW-12B gradually decreased from 8.18 feet in May 2013 to less than 1 foot thick in January 2014. Over the last six months, the DNAPL thickness in MW-12B has been stable at around 0.6 to 0.8 feet thick with a slight increase to about 1.09 feet in December 2014, and decreased back to 0.84 feet in January 2015. DNAPL thickness in MW-41B decreased from the August 2013 event (measured at 10.26 feet) to about 5.5 feet thick in December 2013, but increased in April 2014 to 7.6 feet. Over the past six months, DNAPL thickness in MW-41B has slightly decreased from 6.68 feet to 5.65 feet thick from October 2014 to January 2015 (Figure 2).

  Monitoring well MW-32B had a DNAPL thickness of 6.23 feet at the beginning of the pilot test. During the first 12 months, DNAPL thicknesses in the well generally decreased to less than two-feet thick by September 2013, and has appears to be decreasing over the last six months to a recent low of one foot thick in January 2015.

  Of the all of the wells tested as part of the pilot test, well MW-33BR did not have any measureable DNAPL. No additional DNAPL measurements were collected from this well after October 2014.

  DNAPL thickness in well MW-57B decreased from 1.28 feet thick in July 2013 to less than measureable (DNAPL noted on end of probe) thickness in January 2014 through early October 2014. No additional DNAPL measurements were collected from this well after October 2014.

Wells MW-70B and MW-75B had measureable DNAPL at 1.61 feet and 3.1 feet, respectively, at the beginning of the pilot test. During the first 12 months, DNAPL thicknesses in these wells generally decreased to less than one-foot thick, then increased to just over one foot thick in these two wells in early October 2014. Since then, DNAPL thickness in MW-70B and MW-75B have decreased to less than one-foot thick.

- C-TZ Wells: Similar to the other wells tested, DNAPL thicknesses in the C-TZ wells MW-44C, MW-45C, and MW-46C significantly decreased over the first two months of testing, with some sporadic increases from May through August 2013 (Figure 2). From December 2013 through early October 2014, C-TZ wells MW-44C, MW-45C, and MW-46C showed increasing DNAPL thicknesses with the largest increase at MW-44C increasing about 1.57 feet. However, DNAPL thickness in these three C-TZ wells appears to be stable over the past six months. Well MW-34C was gauged in October 2013, and no DNAPL was measured in the well. Since a street lane closure permit through the City of Houston is required for this well for the testing and no DNAPL was measured during the October 2013 event, this well was removed from the list of wells tested and was plugged and abandoned. In May 2014, replacement well MW-34CR was installed and is now gauged as part of the pilot test program. No DNAPL has been detected in the well.

  Monitoring well MW-23C was added to the pilot test program in early November 2014. The initial DNAPL thickness in the well in November 2014 was 2.09 feet. Since then, the DNAPL thickness has steadily decreased to 1.76 feet in the well.

- An estimated 154 gallons of creosote DNAPL have been recovered during the 24-month period, with monthly DNAPL recovery volumes slightly decreasing over the past six months to around 5 gallons per month (Figure 2). Approximately 50% of the DNAPL recovered is from wells MW-12B and MW-41B.

- Using the last six months of DNAPL thickness data, a Mann-Kendall trend analysis was conducted to statistically evaluate DNAPL thickness trends in the wells tested. A summary table of the trend analysis is provided on Table 2. Trends were not evaluated for MW-33BR, MW57B, or MW-34C because no measureable DNAPL had been detected in the last six months. The Mann-Kendall trend analysis indicated that 10 of the 11 wells had stable, probably decreasing, or decreasing trends in the DNAPL thickness measured in the wells each month. Only well MW-46C had no trend.

The results from the DNAPL recovery pilot test indicate the following:

- Once per month DNAPL recovery activities are resulting in an overall stable DNAPL thickness trend in the wells tested.
- The current monthly recovery frequency appears to be effective with total DNAPL volume recovered becoming stable in the wells over time. More frequent DNAPL recovery would not likely be effective at the Site.

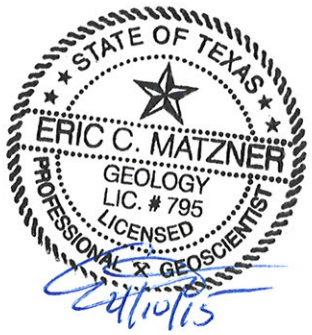
Even though the pilot test has concluded, UPRR plans to continue the monthly DNAPL recovery efforts, and will submit the next status report following the June 2015 recovery event.

If you have any questions or need additional information, please feel free to call me at (512) 671-3434 or Mr. Geoffrey Reeder of UPRR at (281) 350-7197.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric C. Matzner, P.G.
Associate Hydrogeologist



cc: Waste Program Manager, TCEQ Region 12, Houston
Mr. Geoffrey Reeder, P.G., UPRR – Spring, TX

TABLES

TABLE 1

SUMMARY OF DNAPL RECOVERY MEASUREMENTS
UPRR HOUSTON, TX - WOOD PRESERVING WORKS

	MW-12B				MW-23C				MW-32B				MW-33BR				MW-34C/MW-34CR (July 2014)			
DNAPL Recovery Date	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)
2/14/2013	9.06	39.87	5.93	2.5	NM	NM	NM	---	6.01	30.06	6.23	2	3.72	ND	0	---	NM	NM	NM	---
4/3/2013	9.41	39.95	5.85	1	NM	NM	NM	---	4.86	33.61	2.68	1	4.02	PoP	0	---	NM	NM	NM	---
4/22/2013	8.61	31.64	14.16	0.5*	NM	NM	NM	---	5.62	36.08	0.21	0.25	3.63	ND	0	---	NM	NM	NM	---
5/30/2013	8.47	37.62	8.18	1.5*	NM	NM	NM	---	5.86	32.21	4.08	2	3.59	ND	0	---	NM	NM	NM	---
6/29/2013	9.62	38.22	7.58	1.5	NM	NM	NM	---	6.79	33.59	2.7	1.5	6.07	ND	0	---	NM	NM	NM	---
7/22/2013	11.16	39.04	6.76	1	NM	NM	NM	---	7.14	33.91	2.38	1.5	9.68	ND	0	---	NM	NM	NM	---
8/26/2013	11.31	39.61	6.19	1	NM	NM	NM	---	7.48	33.83	2.46	1	9.86	ND	0	---	NM	NM	NM	---
9/27/2013	11.17	40.63	5.17	1	NM	NM	NM	---	7.23	34.39	1.9	1	9.57	ND	0	---	NM	NM	NM	---
10/31/2013	11.09	43.71	2.09	1	NM	NM	NM	---	7.16	34.96	1.33	0.53	9.32	ND	0	---	21.63	NM	NM	---
11/27/2013	11.17	44.06	1.74	1	NM	NM	NM	---	7.29	35.03	1.26	0.53	9.16	ND	0	---	NM	NM	NM	---
12/31/2013	11.02	44.62	1.18	1	NM	NM	NM	---	7.16	35.16	1.13	0.5	8.97	ND	0	---	NM	NM	NM	---
1/30/2014	11.34	45.12	0.68	1	NM	NM	NM	---	6.72	34.82	1.47	0.53	7.41	ND	0	---	NM	NM	NM	---
3/3/2014	11.17	44.32	1.48	1	NM	NM	NM	---	6.53	34.52	1.77	0.53	7.16	ND	0	---	NM	NM	NM	---
3/31/2014	11.03	44.53	1.27	1	NM	NM	NM	---	6.29	34.21	2.08	0.53	7.04	ND	0	---	NM	NM	NM	---
4/30/2014	10.92	44.26	1.54	1	NM	NM	NM	---	6.42	34.67	1.62	0.53	6.88	ND	0	---	NM	NM	NM	---
5/27/2014	10.81	44.34	1.46	1	NM	NM	NM	---	6.36	34.72	1.57	0.53	6.72	ND	0	---	NM	NM	NM	---
6/26/2014	10.72	44.61	1.19	1	NM	NM	NM	---	6.21	34.61	1.68	0.53	6.52	ND	0	---	NM	NM	NM	---
7/31/2014	10.13	44.96	0.84	1	NM	NM	NM	---	6.06	34.33	1.96	0.25	6.29	ND	0	---	19.06	NM	NM	---
8/27/2014	10.26	45.12	0.68	1	NM	NM	NM	---	6.18	34.98	1.31	0.25	6.47	ND	0	---	18.96	NM	NM	---
10/3/2014	10.17	44.91	0.89	1	NM	NM	NM	---	6.06	34.72	1.57	0.25	6.32	ND	0	---	18.81	NM	NM	---
11/3/2014	10.29	44.97	0.83	1	22.51	70.71	2.09	0.25	6.18	34.91	1.38	0.25	NM	NM	NM	---	19.06	NM	NM	---
11/24/2014	10.27	44.99	0.81	1	22.56	70.92	1.88	0.5	6.21	35.16	1.13	0.5	NM	NM	NM	---	19.11	NM	NM	---
12/22/2014	10.23	44.71	1.09	1	22.47	70.81	1.99	0.5	6.14	35.02	1.27	0.75	NM	NM	NM	---	19.06	NM	NM	---
1/29/2015	10.16	44.96	0.84	1	22.26	71.04	1.76	0.5	5.71	35.29	1	0.75	NM	NM	NM	---	18.79	NM	NM	---
Total DNAPL Pumped (gal)				***26***				***1.75***				***17.99***				***0***				***0***

Notes:
* - indicates DNAPL and groundwater mixture
--- - No DNAPL pumped
DTW - Depth to water (feet Below Top of Casing (BTOC))
DTD - Depth to DNAPL (feet BTOC)
ND - Not detected
NM - Not measured
PoP - Product on probe, not measureable

TABLE 1

SUMMARY OF DNAPL RECOVERY MEASUREMENTS
UPRR HOUSTON, TX - WOOD PRESERVING WORKS

	MW-41B				MW-44C				MW-45C				MW-46C				MW-57A			
DNAPL Recovery Date	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)
2/14/2013	8.91	41.1	3.71	3	18.96	62.95	7.85	1	21.26	69.9	0.7	0.25	21.07	71.3	1.6	0.25	10.56	22.12	4.78	0.5
4/3/2013	9.37	41.6	3.21	1.5	19.34	70.47	0.33	0.25*	21.39	70.39	0.21	0.25*	20.61	72.36	0.54	0.25*	10.32	24.79	2.11	0.5
4/22/2013	8.62	41.6	3.21	0.5*	18.62	70.64	0.16	0.25*	21.03	70.47	0.13	0.25*	20.61	72.61	0.29	0.25*	10.71	25.85	1.05	0.5
5/30/2013	8.73	34.16	10.65	2	18.43	70.01	0.79	0.25*	21.16	70.25	0.35	0.25*	20.59	71.61	1.29	0.25*	10.63	24.16	2.74	0.5
6/29/2013	9.72	37.12	7.69	2	19.34	70.32	0.48	0.25	21.93	70.32	0.28	0.25*	21.09	72.34	0.56	0.25*	12.16	23.82	3.08	2
7/22/2013	10.31	39.29	5.52	1.5	20.36	70.26	0.54	0.25	22.72	70.39	0.21	0.25*	21.96	72.16	0.74	0.25*	13.21	23.05	3.85	2
8/26/2013	10.09	34.55	10.26	2.5	20.62	70.39	0.41	0.25	22.86	70.31	0.29	0.25	22.23	72.32	0.58	0.25	12.91	25.32	1.58	1
9/27/2013	9.63	37.29	7.52	2	20.39	70.61	0.19	0.25	22.66	70.17	0.43	0.25	22.09	72.09	0.81	0.25	12.72	25.71	1.19	0.75
10/31/2013	9.52	38.16	6.65	2	20.17	70.75	0.05	0.07	22.59	70.42	0.18	0.13	22.41	72.34	0.56	0.2	12.72	25.92	0.98	1
11/27/2013	9.57	38.39	6.42	2	20.09	70.78	0.02	---	22.52	70.49	0.11	---	22.31	72.47	0.43	0.07	12.61	25.98	0.92	1
12/31/2013	9.42	39.36	5.45	2	20.01	70.8	PoP	---	22.39	70.46	0.14	---	22.03	72.53	0.37	0.07	12.46	26.09	0.81	1
1/30/2014	9.06	39.17	5.64	2	19.67	70.42	0.38	0.25	22.13	70.35	0.25	---	21.81	72.55	0.35	0.07	11.79	26.15	0.75	0.25
3/3/2014	8.62	38.06	6.75	2	19.29	70.17	0.63	0.25	21.86	70.09	0.51	---	21.57	72.05	0.85	0.25	11.02	26.25	0.65	0.25
3/31/2014	8.52	37.74	7.07	2	19.17	70.02	0.78	0.25	21.71	69.63	0.97	0.25	21.43	72.12	0.78	0.13	10.83	26.41	0.49	0.25
4/30/2014	8.36	37.21	7.6	2	19.02	69.81	0.99	0.25	21.59	69.74	0.86	0.25	21.27	71.81	1.09	0.25	10.71	26.31	0.59	0.25
5/27/2014	8.26	37.29	7.52	2	18.92	69.71	1.09	---	21.52	69.67	0.93	0.25	21.34	71.71	1.19	0.25	10.74	26.16	0.74	0.25
6/26/2014	8.02	37.47	7.34	2	18.81	69.52	1.28	0.25	21.59	69.77	0.83	0.25	21.17	71.6	1.3	0.25	10.61	26.29	0.61	0.25
7/31/2014	8.21	37.92	6.89	2	18.66	69.37	1.43	0.25	21.21	69.96	0.64	0.25	20.39	71.43	1.47	0.25	10.35	26.18	0.72	0.25
8/27/2014	8.07	38.29	6.52	1.5	18.53	69.47	1.33	0.25	21.13	70.12	0.48	0.25	20.22	71.61	1.29	0.25	10.22	26.26	0.64	0.25
10/3/2014	8.02	38.13	6.68	2	18.41	69.23	1.57	0.25	20.13	70.41	0.19	0.25	20.14	71.39	1.51	0.25	10.09	26.04	0.86	0.25
11/3/2014	8.22	38.29	6.52	2	18.52	69.37	1.43	0.25	20.29	70.36	0.24	0.25	20.27	71.47	1.43	0.25	10.17	26.16	0.74	0.25
11/24/2014	8.27	38.47	6.34	2	18.57	69.49	1.31	0.5	20.34	70.48	0.12	0.25	20.38	71.53	1.37	0.5	10.13	26.29	0.61	0.25
12/22/2014	8.16	38.39	6.42	2	18.51	69.31	1.49	0.5	20.31	70.41	0.19	0.25	20.37	71.42	1.48	0.5	10.06	26.34	0.56	0.25
1/29/2015	8.02	39.16	5.65	1.5	18.39	69.39	1.41	0.5	20.17	70.51	0.09	0.25	20.13	71.48	1.42	0.5	9.73	26.51	0.39	0.25
Total DNAPL Pumped (gal)				***46***				***6.57***				***4.88***				***6.04***				***14***

Notes:
* - indicates DNAPL and groundwater mixture
--- - No DNAPL pumped
DTW - Depth to water (feet Below Top of Casing (BTOC))
DTD - Depth to DNAPL (feet BTOC)
ND - Not detected
NM - Not measured
PoP - Product on probe, not measureable

TABLE 1

SUMMARY OF DNAPL RECOVERY MEASUREMENTS
UPRR HOUSTON, TX - WOOD PRESERVING WORKS

	MW-57B				MW-70B				MW-75B				MW-78A				Approx
DNAPL Recovery Date	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DTW (ft BTOC)	DTD (ft BTOC)	DNAPL Thickness (ft)	DNAPL Pumped (gal)	DNAPL Recovered (gal)
2/14/2013	28.56	41.41	1.54	0.25	6.57	34.09	1.61	0.25	10.01	34.1	3.1	0.25	NM	NM	NM	---	10.25
4/3/2013	28.09	42.36	0.59	0.25*	6.79	35.26	0.44	0.25	13.71	36.47	0.73	0.25	NM	NM	NM	---	5.5
4/22/2013	27.06	42.17	0.78	0.25	6.06	35.12	0.58	0.25	9.72	36.72	0.48	0.25	NM	NM	NM	---	3.25
5/30/2013	27.13	41.63	1.32	0.25	6.19	34.67	1.03	0.25	9.61	35.09	2.11	*0.75*	NM	NM	NM	---	8
6/29/2013	18.26	42.07	0.88	0.25	8.01	34.92	0.78	0.25*	10.61	35.61	1.59	*0.75*	NM	NM	NM	---	9
7/22/2013	16.34	41.67	1.28	0.75	8.22	34.07	1.63	0.25*	9.74	35.71	1.49	*0.75*	NM	NM	NM	---	8.5
8/26/2013	18.01	42.31	0.64	0.25	8.17	35.09	0.61	0.25	10.76	35.93	1.27	0.75	NM	NM	NM	---	7.5
9/27/2013	17.74	42.51	0.39	0.25	8.32	35.34	0.36	0.25	10.52	36.39	0.81	0.5	NM	NM	NM	---	6.5
10/31/2013	17.61	42.61	0.29	0.07	8.26	35.39	0.31	0.07	10.31	36.47	0.73	1	NM	NM	NM	---	6.07
11/27/2013	17.54	42.67	0.23	0.07	8.12	35.42	0.28	0.07	10.39	36.51	0.69	1	NM	NM	NM	---	5.74
12/31/2013	17.36	42.74	0.16	0.07	7.89	35.51	0.19	0.07	10.13	36.72	0.48	1	NM	NM	NM	---	5.71
1/30/2014	17.04	NM	PoP	---	7.84	35.06	0.64	0.07	12.62	36.49	0.71	0.75	NM	NM	NM	---	4.92
3/3/2014	16.51	NM	PoP	---	7.09	35.05	0.65	0.13	12.12	36.35	0.85	0.75	NM	NM	NM	---	5.16
3/31/2014	16.41	NM	PoP	---	6.87	35.17	0.53	0.07	12.01	36.27	0.93	0.75	NM	NM	NM	---	5.23
4/30/2014	16.29	NM	PoP	---	6.72	35.01	0.69	0.07	11.84	36.02	1.18	0.75	NM	NM	NM	---	5.35
5/27/2014	16.13	NM	PoP	---	6.64	34.86	0.84	0.07	11.71	35.79	1.41	0.75	NM	NM	NM	---	5.1
6/26/2014	16.02	NM	PoP	---	6.52	34.97	0.73	0.25	11.58	35.91	1.29	0.5	NM	NM	NM	---	5.28
7/31/2014	15.84	NM	PoP	---	6.26	34.76	0.94	0.25	11.32	35.82	1.38	0.5	NM	NM	NM	---	5
8/27/2014	15.71	NM	PoP	---	6.84	34.86	0.84	0.25	11.19	36.09	1.11	0.5	NM	NM	NM	---	4.5
10/3/2014	15.61	NM	PoP	---	6.71	34.61	1.09	0.25	11.09	36.01	1.19	0.5	NM	NM	NM	---	5
11/3/2014	NM	NM	NM	---	6.79	34.79	0.91	0.25	11.16	36.19	1.01	0.75	9.31	19.12	6.23	2.00	7.50
11/24/2014	NM	NM	NM	---	6.77	34.93	0.77	0.25	11.21	36.27	0.93	0.5	9.39	19.62	5.73	2.00	8.25
12/22/2014	NM	NM	NM	---	6.69	34.86	0.84	0.25	11.26	36.19	1.01	0.5	9.34	19.86	5.49	2.00	8.50
1/29/2015	NM	NM	NM	---	6.48	34.92	0.78	0.25	11.06	36.34	0.86	0.5	9.14	21.29	4.06	2.00	8.00
Total DNAPL Pumped (gal)				***2.71***				***4.62***				***15.25***				***8***	***153.81***

Notes:
* - indicates DNAPL and groundwater mixture
--- - No DNAPL pumped
DTW - Depth to water (feet Below Top of Casing (BTOC))
DTD - Depth to DNAPL (feet BTOC)
ND - Not detected
NM - Not measured
PoP - Product on probe, not measureable

TABLE 2

SUMMARY OF DNAPL THICKNESS TREND ANALYSIS - LAST SIX MONTHS OF PILOT TEST
UPRR HOUSTON, TX - WOOD PRESERVING WORKS

DNAPL THICKNESS MANN-KENDALL TEST ANALYSIS

		DNAPL IN-WELL THICKNESS (FT) - PILOT TEST - LAST SIX MONTHS (AUG 2014 - JAN 2015)										
Recovery Event	WELL ID: Date	MW-57A	MW-78A	MW-12B	MW-32B	MW41B	MW-70B	MW-75B	MW23C	MW44C	MW-45C	MW-46C
19	8/27/2014	0.64	---	6.52	1.31	6.52	0.84	1.11	---	1.33	0.48	1.29
20	10/3/2014	0.86	---	6.68	1.57	6.68	1.09	1.19	---	1.57	0.19	1.51
21	11/3/2014	0.74	0.74	6.52	1.38	6.52	0.91	1.01	2.09	1.43	0.24	1.43
22	11/24/2014	0.61	0.61	6.34	1.13	6.34	0.77	0.93	1.88	1.31	0.12	1.37
23	12/22/2014	0.56	0.56	6.42	1.27	6.42	0.84	1.01	1.99	1.49	0.19	1.48
24	1/29/2015	0.39	0.39	5.65	1	5.65	0.78	0.86	1.76	1.41	0.09	1.42
Coefficient of Variation:		0.25	0.25	0.06	0.16	0.06	0.14	0.12	0.07	0.07	0.64	0.06
Mann-Kendall Statistic (S):		-11	-6	-10	-9	-10	-6	-10	-4	-1	-10	1
Confidence in Trend:		97.2%	95.8%	95.2%	93.2%	95.2%	81.5%	95.2%	83.3%	50.0%	95.2%	50.0%
Estimated Trend:		**Decreasing**	**Decreasing**	**Decreasing**	**Prob. Decreasing**	**Decreasing**	**Stable**	**Decreasing**	**Stable**	**Stable**	**Decreasing**	**No Trend**

Notes:

Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0). > 90% = Probably Increasing or Decreasing;
>95% = Increasing or Decreasing.
--- = not measured

FIGURES

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Monitoring Well Location
- Monitoring Well Location with DNAPL
- Plugged and Abandoned Monitoring Well Location (May 2014)
- (0.84) In Well DNAPL Thickness (Ft)

N

Approx. Scale in Feet

0 200 400

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

HWPW

Englewood Intermodal Yard

MW-27A
MW-27C
MW-67B
MW-53C
MW-65D
MW-28C
MW-28A
MW-63B
MW-54C
MW-68C
MW-26A
MW-33BR (0)
MW-36B
MW-36D
MW-44A
MW-45C (0.09)
MW-46C (1.42)
MW-66D
MW-68B
MW-36A
MW-25C
MW-25A
MW-44C (1.41)
MW-34CR (0)
MW-35B
MW-33A
MW-35A
MW-32AR
MW-32B (1.00)
MW-70B (0.78)
MW-71B
MW-34C
MW-57B (0)
MW-57A (0.39)
MW-18C
MW-58A
MW-60A
MW-13
MW-15C
MW-17
MW-30A
MW-23C (1.76)
MW-72B
MW-18A
MW-47C
MW-14
MW-15A
MW-15B
MW-17C
MW-52A
TW-56A
MW-20A
MW-31A
MW-55B
MW-55A
MW-19C
MW-38A
MW-39B
MW-73B
MW-48C
MW-12A
MW-12C
MW-40B
MW-74B
MW-49B
MW-61A
MW-38B
MW-12B (0.84)
MW-16
MW-49A
MW-42B
MW-79A
TW-41B
MW-62B
MW-41B (5.65)
MW-69A
MW-59A
MW-59B
MW-59D
MW-75B (0.86)
P-11
MW-02
MW-01A
MW-03
MW-10A
MW-08
P-12
MW-78A (4.06)
MW-80B
MW-22A
MW-10B
MW-09
MW-22B
MW-11B
MW-11A
P-10
MW-04
MW-07
MW-21C
MW-05
MW-77A
MW-24C
MW-24B
MW-24AR
MW-64A
MW-76C
MW-50A
MW-81B
MW-51A
MW-51C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

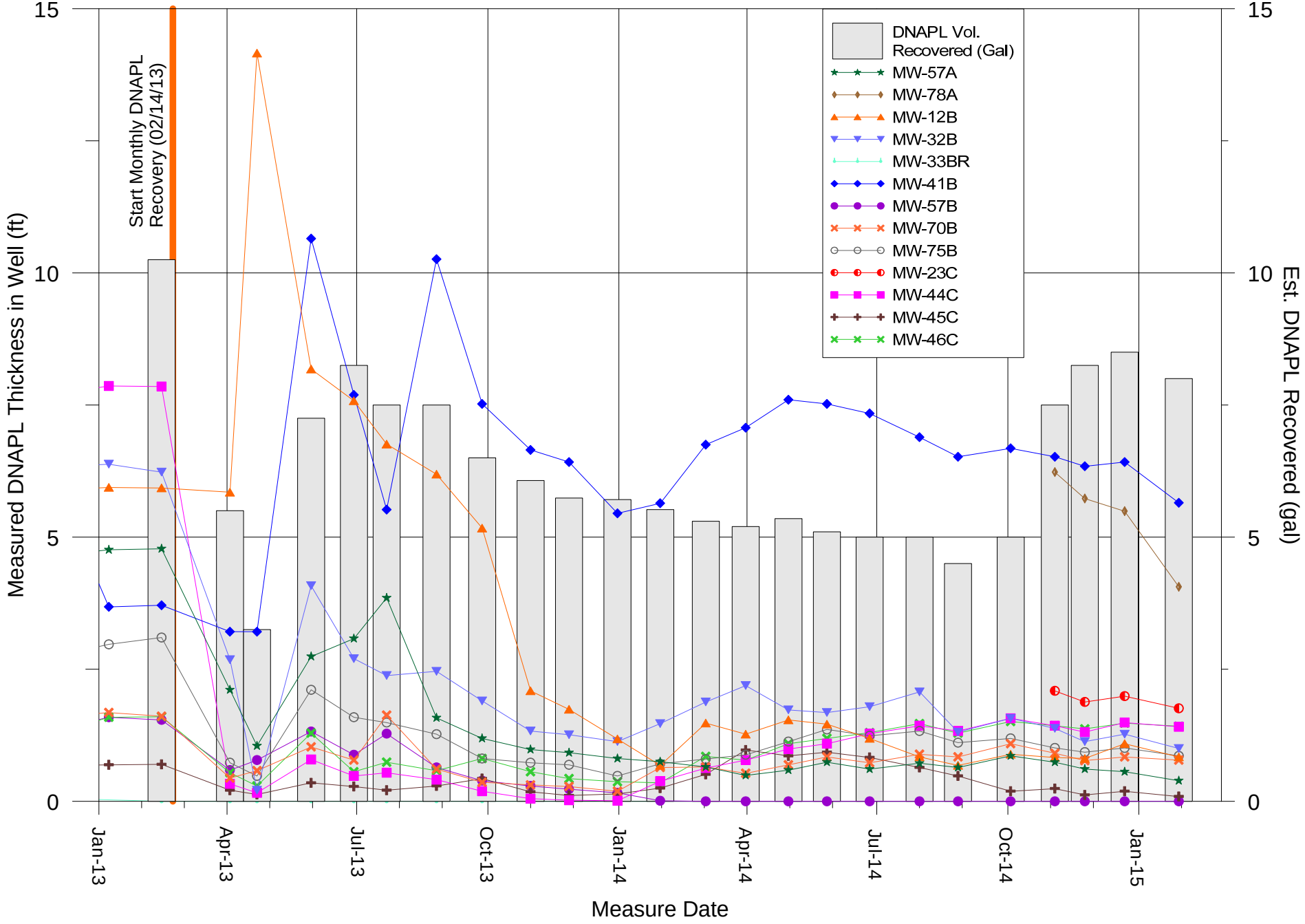
Figure 1

IN-WELL DNAPL THICKNESS JANUARY 2015

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: APRIL., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Figure 2
DNAPL Recovery Pilot Test February 2013 - January 2015
UPRR Houston Wood Preserving Works



ATTACHMENT A

WASTE MANIFESTS

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
TXD000820266	1	866-780-3116	002498172 GBF

GENERATOR

5. Generator's Name and Mailing Address
UNION PACIFIC RAILROAD
c/o USA, P.O. Box 87687
Houston, TX 77287
Generator's Phone: 281-350-7197

Generator's Site Address (if different than mailing address)
4910 Liberty Road
Houston, TX 77287

6. Transporter 1 Company Name: USA WASTE TRANSPORTATION SERVICES — U.S. EPA ID Number: TXR000032045

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
CLEAN HARBORS DEER PARK, LLC
2027 INDEPENDENCE PARKWAY SOUTH
LA PORTE, TX 77571
Facility's Phone: 281-930-2300
U.S. EPA ID Number: TXD055141378

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., 9, PGIII, RQ (CREOSOTE)	001	DM	300	P	0918	219H	F034
X	2. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S. (F034 WATER), 9, PGIII	002	DM	625	P	0914	101H	F034
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)CH629200 2)CH229097 3x55
WO # 1402795600 Job # 2469-TA-H156

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEOFFREY REEDER — Signature: Geoffrey Reeder — Month 11 Day 6 Year 14

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: L. "De. Monte" Hatch — Signature: L. De. Monte Hatch — Month 11 Day 6 Year 14

Transporter 2 Printed/Typed Name: Shiela Alexander — Signature: SMA — Month 11 Day 06 Year 14

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H040			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Mary Salazar — Signature: Mary Salazar — Month 11 Day 18 Year 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
TXD000820286	1	866-780-3116	013260518 JJK

GENERATOR

5. Generator's Name and Mailing Address
UNION PACIFIC RAILROAD
c/o USA, P.O. Box 87687
Houston, TX 77287
Generator's Phone: 281-350-7197

Generator's Site Address (if different than mailing address)
4910 Liberty Road
Houston, TX 77287

6. Transporter 1 Company Name: USA WASTE TRANSPORTATION SERVICES — U.S. EPA ID Number: TXR000032045

7. Transporter 2 Company Name: Clean Harbors — U.S. EPA ID Number: MAD039322250

8. Designated Facility Name and Site Address
CLEAN HARBORS DEER PARK, LLC
2027 INDEPENDENCE PARKWAY SOUTH
LA PORTE, TX 77571
Facility's Phone: 281-930-2300
U.S. EPA ID Number: TXD055141378

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., 9, PGIII, RQ (CREOSOTE)	001	DM	80	P	0918	218H	F034
X	2. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S. (F034 WATER), 9, PGIII	~~001~~ 001	DM	80	P	0914	101H	F034
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)CH629200 2)CH229097

Workorder # 1500411209 USA Job # 2469-TD-H156

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEOFFREY REEDER — Signature: Geoffrey Reeder — Month 12 Day 9 Year 15

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: L. "DE.MONE" HATCH — Signature: L De. Mone Hatch — Month 12 Day 9 Year 15

Transporter 2 Printed/Typed Name: Cherica Gray — Signature: [signature] — Month 12 Day 10 Year 15

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H040	H040		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: KIM BRANNEN — Signature: [signature] — Month 12 Day 10 Year 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

APPENDIX 3D

STUDIES/TESTS DOCUMENTATION - REQUEST FOR PRELIMINARY REVIEW OF AREA OF CONTAMINATION (AOC)

PBW

Consulting Engineers
and Scientists

PASTOR, BEHLING & WHEELER, LLC
2201 Double Creek Drive, Suite 4004
Round Rock, TX 78664

Tel (512) 671-3434
Fax (512) 671-3446

October 7, 2015
PBW Project No. 1358

Ms. Maureen Hatfield
MC-127
VCP-CA Section, Team 1, Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Request for Review of Area of Contamination (AOC) Revision
Houston Wood Preserving Works Facility
4910 Liberty Road Facility, Houston, Texas
Post-Closure Care Permit No. HW-50343; Industrial SWR No. 31547

Dear Ms. Hatfield:

Pastor, Behling & Wheeler, LLC (PBW), on behalf of Union Pacific Railroad Company (UPRR), is pleased to submit the following information regarding the proposed revision to the Area of Contamination (AOC) approach for the UPRR Houston Wood Preserving Works site (the Site) in Houston, Texas. PBW prepared the initial AOC request to the Texas Commission on Environmental Quality (TCEQ) in a letter dated November 20, 2014, which was approved by the TCEQ in a letter dated February 19, 2015. Since the approval, additional soil data were collected in April and August 2015 that have modified the surface soil Affected Property and Protective Concentration Level (PCL) Exceedance (PCLE) Zones (Figure 1). For the purposes of this AOC, the area of contamination is defined at the Site by the Soil Affected Property and PCLE Zones (Figure 1).

As discussed in the November 20, 2014 letter, UPRR is proposing to use the AOC policy for surface soils with critical PCL (cPCL) exceedances in portions of the former Southern Drainage Ditch (SDD) (SWMU 2), Inactive Wastewater Lagoon (Area of Concern 6), and areas north of the Aboveground Storage Tank (AST) Area (SWMU 8) (Figure 1). Through additional soil sampling in 2015, some of the proposed excavation areas previously identified were reduced in size and two additional areas will be excavated, one east of AOC4 and another area north of SWMU 5 (Figure 1). Most of the soils within the former SDD SWMU 2 will now be capped with an asphalt road (details to be provided in the revised Response Action Plan (RAP)). Surface soils with cPCL exceedances in these other areas will be consolidated within the AOC around SWMUs 4, 5, and 8. Soils removed from the proposed excavation areas will be conducted under Remedy Standard A. The removal action is designed to remove surface soils containing chemicals of concern (COCs) at concentrations exceeding cPCLs. The soils will be excavated to the vertical extent of the PCLE zone, estimated to be a maximum of approximately 3 feet deep (no greater than 5 feet deep). Soils will be placed within the AOC near SWMU 4, 5 and 8 and covered with an engineered soil cap (Figure 1). Verification sampling will be performed at the excavation areas following

excavation of soils to ensure that the affected soils containing COCs at concentrations in excess of the applicable cPCLs have been removed.

Based on the current areas delineated, the estimated volume of soil to be consolidated is approximately 9,800 cubic yards (7,800 cubic yards in-situ, plus 25 percent contingency volume).

During consolidation activities, Site workers will have proper Occupational Safety and Health Administration (OSHA) training and will operate under a site-specific health and safety plan (HASP). The impacted soils will be consolidated within the surface soil Affected Property. Any equipment and tooling that comes in contact with impacted soils will be decontaminated and managed within the AOC. Storm water protection (i.e., Storm Water Pollution Prevention Plan (SWPPP), silt fencing) and fugitive dust monitoring for site-related COCs will be conducted during remediation activities to ensure the activities will not result in additional exposure conditions. Upon completion of verification sampling, the excavation area will be restored by backfilling with clean fill and/or grading.

A closure report will be submitted with the overall Response Action Completion Report (RACR) following completion of the proposed response actions detailed in the Response Action Plan (RAP) that was submitted to the TCEQ in December 2014. Details on the post-closure care of the proposed soil cap and associated financial assurance are provided in the RAP.

The estimated schedule for the proposed activities regarding soil consolidation within the AOC consists of the following:

- HWPW Area Surface Soil Response Action (soil consolidation and cap construction) – Begin within 60 days of approval of this revised AOC request with an anticipated 180 days for completion;
- RACR – Within 60 days of completion of response actions.

The February 19, 2015 TCEQ letter stated that the “excavation, management, and disposition of all waste shall be completed no later than December 15, 2015”, and “authorization for the AOC will terminate on December 15, 2015.” With the additional soil sampling and revision to the RAP to include an area of an asphalt road as part of the response action for soils, UPRR respectfully requests to extend the expiration date of the AOC to February 15, 2016.

If you have any questions or need additional information, please feel free to call me at (512) 671-3434 or Mr. Geoffrey Reeder of UPRR at (281) 350-7197.

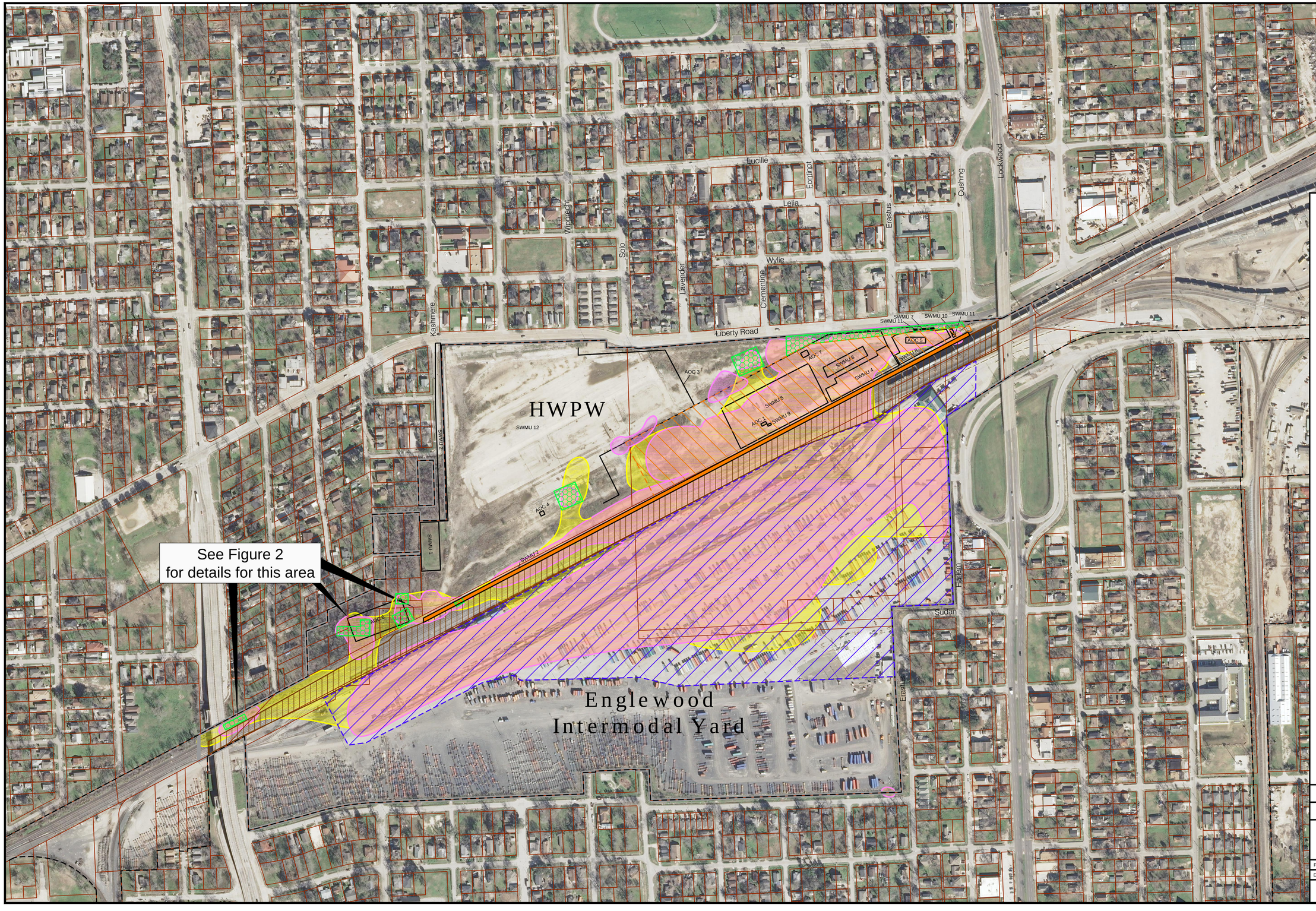
Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric C. Matzner, P.G.
Associate Hydrogeologist

cc: Mr. Geoffrey Reeder, P.G., UPRR – Spring, TX

AREA OF CONTAMINATION FIGURES



EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)

Area of Contamination:

- Soil Affected Property
- Soil PCLE Zone
- Railroad Ballast Cap Area
- Concrete Cap Area
- Extent of Soil Cap
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
- Proposed Asphalt Cap

Note:
Vertical datum based on City of Houston Vertical Datum (HVD).

SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

N

Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 1

RESPONSE ACTION DESIGN SOILS

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

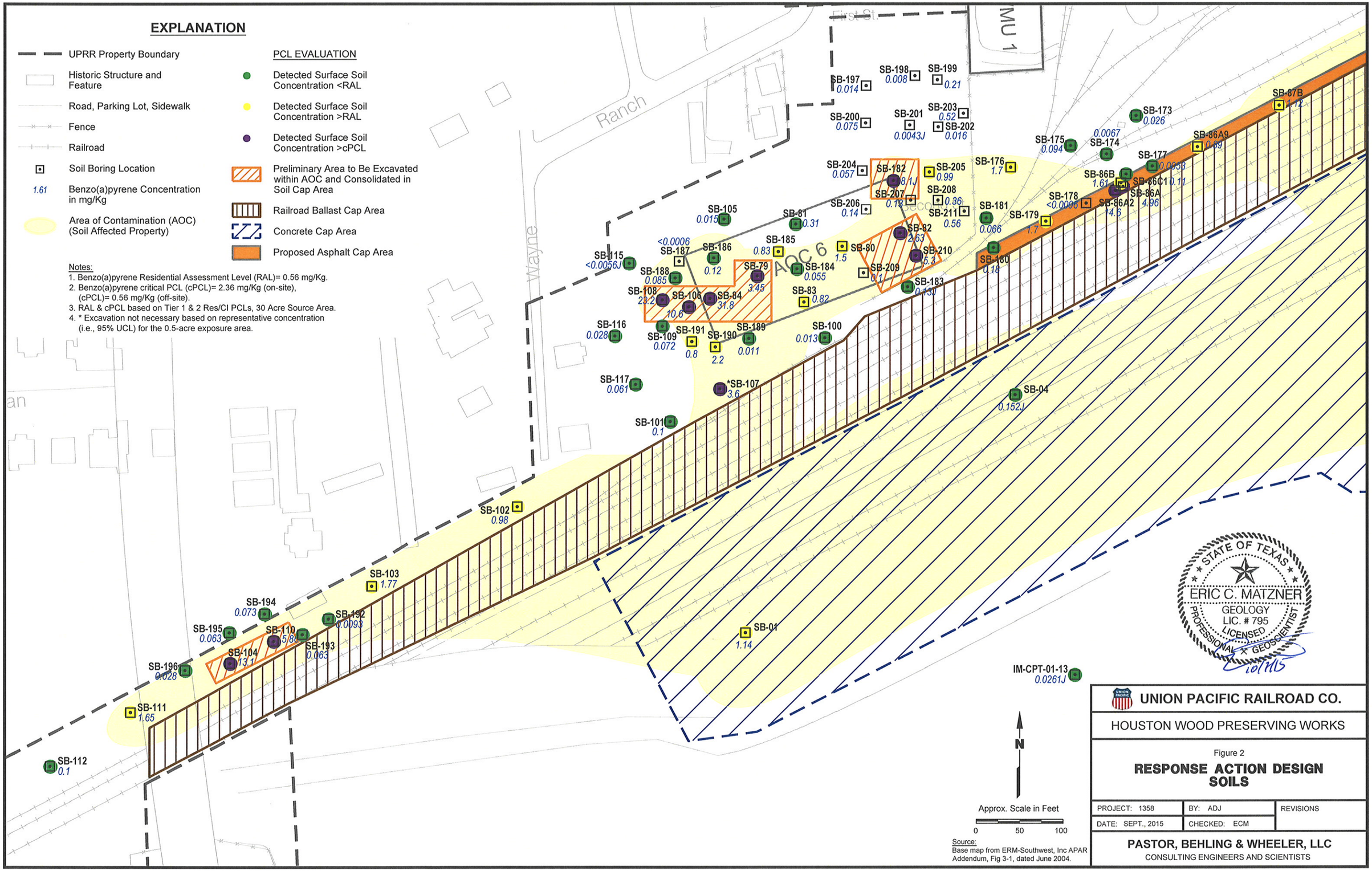
EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Soil Boring Location
- 1.61 Benzo(a)pyrene Concentration in mg/Kg
- Area of Contamination (AOC) (Soil Affected Property)

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
- Railroad Ballast Cap Area
- Concrete Cap Area
- Proposed Asphalt Cap Area

Notes:
1. Benzo(a)pyrene Residential Assessment Level (RAL)= 0.56 mg/Kg.
2. Benzo(a)pyrene critical PCL (cPCL)= 2.36 mg/Kg (on-site), (cPCL)= 0.56 mg/Kg (off-site).
3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
4. * Excavation not necessary based on representative concentration (i.e., 95% UCL) for the 0.5-acre exposure area.



STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
10/7/15

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 2

RESPONSE ACTION DESIGN SOILS

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 5, 2015

Mr. Geoffrey Reeder, P.G.
Manager Environmental Site Remediation Safety
Union Pacific Railroad
24125 Aldine Westfield Road
Spring, TX 77373

Re: Application Amendment
Request to Revise the Area of Contamination, dated October 7, 2015
Union Pacific Railroad Houston Wood Preserving Works Facility, 4910 Liberty Rd., Houston, Harris County, TX,
TCEQ SWR No. 31547;
TCEQ Permit/Compliance Plan No. 50343;
EPA ID No.TXD000820266
Customer No. CN600131098; Regulated Entity No. RN100674613

Dear Mr. Reeder:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above referenced application submitted by Union Pacific Railroad (UPRR) to amend the established Area of Contamination (AOC) near Solid Waste Management Units (SWMUs) 4, 5 and 8 at the Houston Wood Preserving Works facility. The AOC was conditionally approved by the TCEQ on February 19, 2015. The conditional approval allows UPRR to remediate any affected soils which may contain hazardous waste and consolidate affected soils into a single area or engineered unit within the AOC. The areas of affected soils exceeding critical PCLs in SWMU 2, areas north of SWMU 8, and Area of Concern 6, are to be excavated to meet TRRP Remedy Standard A.

In the application, UPRR is proposing to change the existing AOC footprint based on the August 2015 sampling by reducing the critical PCL zone at SWMUs 2 and 8, and Area of Concern 6. UPRR will include two additional areas to be excavated, one east of Area of Concern 4, and another area north of SWMU 5 (as shown in the enclosed Figures 1 & 2). In addition, UPRR is requesting to extend the AOC termination date from December 15, 2015 to February 15, 2016 in order to include the additional excavation areas, soil sampling and complete the proposed response actions within the AOC. Based on our review of the above referenced document, the TCEQ conditionally approves UPRR's amendment to the existing February 19, 2015 AOC, as defined under Resource Conservation and Recovery Act (RCRA) guidance to incorporate the above proposed changes.

Conditions of Approval

- The amended boundary of UPRRs' proposed AOC is designated in the enclosed maps (Figures 1 & 2).
- UPRR must establish access controls to ensure worker safety protection with regard to constituents of concern (COC) exposure in the AOC. Only authorized personnel having proper Occupational Safety and Health Administration (OSHA) and site-specific training will be allowed access into the AOC.
- Corrective action activities will occur at the following Solid Waste Management Units (SWMUs) within the AOC:

  Southern Drainage Ditch (SDD) SWMU 2

  Inactive Wastewater Lagoon (Area of Concern 6)

  Areas north of Aboveground Storage Tank (AST) SWMU 8

  Two additional areas east of area of concern 4, and another area north of SWMU 5

  An estimated 9,800 cubic yards of affected soils will be removed from the above referenced units/areas, and UPRR will collect verification samples from each of the units/areas to document Remedy Standard A critical protective concentration levels (PCLs) are met. Excavated areas will be backfilled with clean fill and graded.
- UPRR will consolidate the excavated soils within the AOC around SWMUs 4, 5, and 8 and the affected soils will be covered with an engineered soil cap as detailed in Response Action Plan (RAP) that was submitted with the Permit Renewal application in December 2014 to include the proposed soil cap design, proposed post closure care and associated financial assurance.
- Within 60 days of approval of the revised AOC, UPRR shall implement the soil response actions and cap construction, with an anticipated completion date of 180 days.
- Within 60 days of completion of response actions, UPRR will submit a Response Action Completion Report documenting remediation activities.
- UPRR will implement storm water run-on and run-off control measures, including construction of temporary berms and covering of stockpiles using plastic sheeting as needed to manage contact water issues. Excavation and management of the soils within the AOC will not trigger the Land Disposal Restrictions provisions of RCRA. The excavation, management and disposition of all waste shall be completed no later than February 15, 2016.
- UPRR must comply with all other substantive requirements of RCRA with in the proposed AOC.
- UPRR shall ensure adequate dust monitoring and suppression at all times during demolition and removal of any existing concrete slab, inactive subsurface utilities and/or affected soils; and, during construction of a new warehouse facility within the AOC. Dust suppression activities may include the use of controlled water misting or soil/concrete wetting to control generation and dispersal of dust.

- UPRR will be required to maintain the ongoing corrective action system during the AOC in accordance with the above referenced Permit/Compliance Plan.
- UPRR must maintain efforts to provide adequate storm water protection at all times. Please note that the proposed demolition and remediation activities may not be covered by any existing industrial storm water authorization for the operating facility or the TCEQ's construction general permit. Please contact the TCEQ's Water Quality Division for additional information regarding activities authorized via any existing or planned permits.
- UPRR will be required to provide TCEQ with semi-annual updates concerning the progress of the remediation and conditions of the AOC. The submittal of the semi-annual report shall begin the first January or June after the AOC approval date.
- Authorization for the AOC will terminate on February 15, 2016, thereafter any excavation transfer, treatment, storage, and disposal of waste shall comply with the existing rules and regulations.

This authorization directs UPRR to begin the implementation of the conditionally approved plan and AOC. Noncompliance with the conditions of this AOC may result in revocation of this AOC option in favor of options under the Industrial and Hazardous Waste Permits Program. The facility name, location and identification numbers(s) in the TCEQ reference line above should be included in all future reports submitted to the Remediation Division at the letterhead address using Mail Code MC-127. An additional copy should be submitted to the TCEQ Region Office. Questions concerning this letter should be directed to me at (512) 239-2034 or maureen.hatfield@tceq.texas.gov. Thank you for your cooperation in this matter.

Sincerely,

Maureen Hatfield, P.G., Project Manager
Team 1, VCP-CA Section, MC127
Remediation Division
Texas Commission on Environmental Quality

MH/mdh

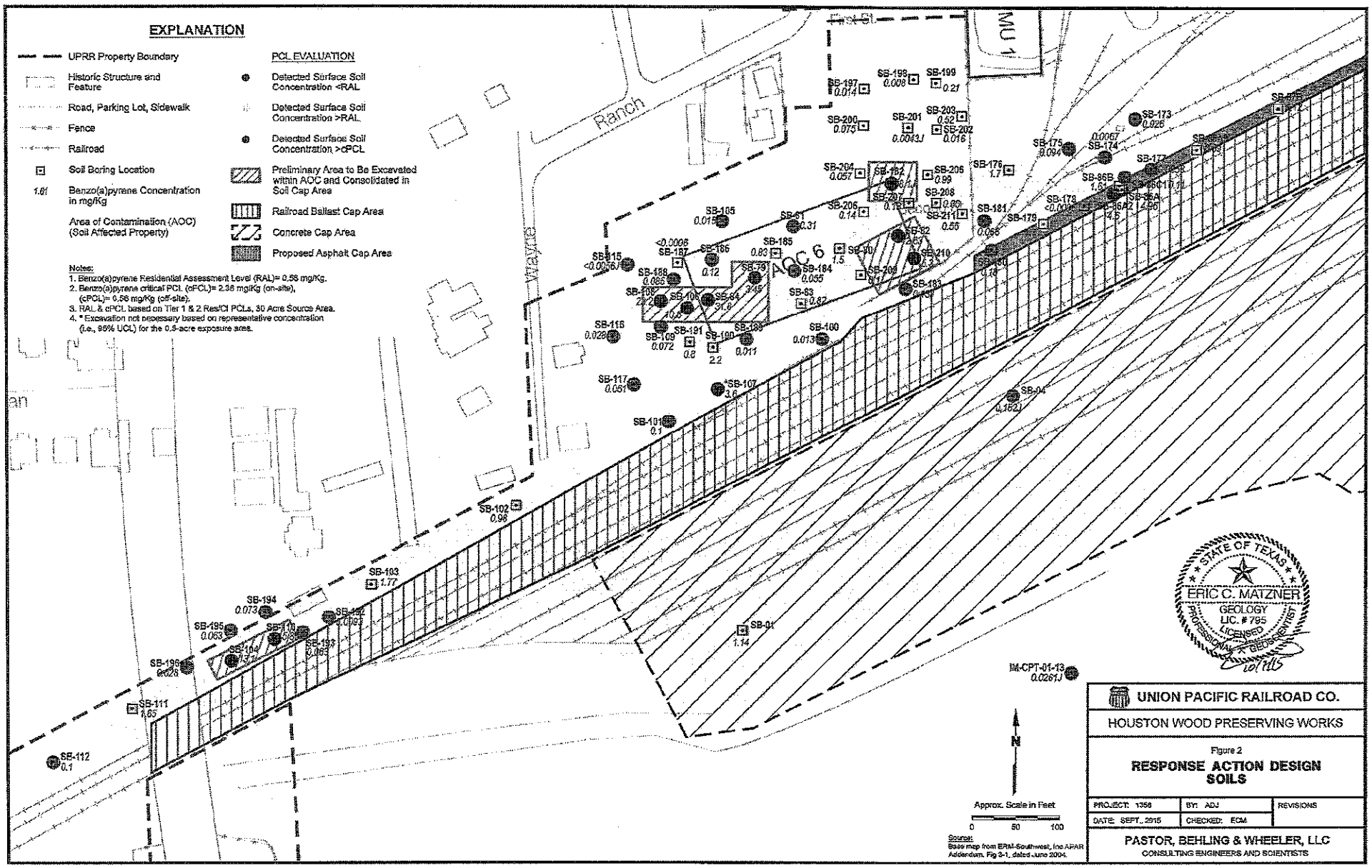
Enclosure

cc: Mr. Eric Metzner, P.G. Pastor, Behling & Wheeler, LLC 2201 Double Creed Dive, Ste. 4004, Round Rock, TX 78664

Mr. Jason Ybarra, Waste Section Manager, TCEQ Region 12 Office, Houston

HWPW
Englewood
Intermodal Yard
See Figure 2
for details for this area
EXPLANATION
UPRR Property Boundary
Property Boundary (GIMS)
Area of Contamination
Soil Affected Property
Soil PCLE Zone
Railroad Ballast Cap Area
Concrete Cap Area
Extent of Soil Cap
Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
Proposed Asphalt Cap
Note:
Vertical datum based on City of Houston Vertical Datum (HVD).
SWMU/AOC AREAS
No.
Description
SWMU 1
Closed Surface Impoundment
SWMU 2
Northern and Southern Drainage Ditches
SWMU 4
Former Pentosin Area
SWMU 5
Original Process Area
SWMU 6
Water Treatment and Boiler System
SWMU 7
Tank Car Storage Area
SWMU 8
Aboveground Storage Tank Area
SWMU 9
Location of Former UST No. 44-023-06
SWMU 10
Location of Former Gas/Water Treatment Tank
SWMU 11
Off-Water Separators
SWMU 12
Railroad Tie Storage Area
AOC 1
Diesel Storage Tank
AOC 3
Contaminated Portion of City Water Line
AOC 4
Location of Former Impressed
AOC 5
City Storm Sewer
AOC 6
Inactive Wastewater Lagoon
AOC 7
Location of Former UST No. 44-023-21
Note:
Limits/size of SWMU 4 and AOCs 1, 3, 5 and 7 are approximate.
N
State in Feet
0
200
400
Source:
Aerial Orthophotos: City of Houston Geospatial Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (H-GAC) 2012 Aerial.
UNION PACIFIC RAILROAD CO.
HOUSTON WOOD PRESERVING WORKS
Figure 1
RESPONSE ACTION DESIGN
SOILS
PROJECT: 1568
SYL ADD
REVISIONS
DATE: SEPT. 2015
CHECKED: SRM
PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EN CLOSURE


EXPLANATION
UPRR Property Boundary
Historic Structure and Feature
Road, Parking Lot, Sidewalk
Fence
Railroad
Soil Boring Location
1.61 Benzo(a)pyrene Concentration in mg/Kg
Area of Contamination (AOC) (Soil Affected Property)
PCL EVALUATION
Detected Surface Soil Concentration <RAL
Detected Surface Soil Concentration >RAL
Detected Surface Soil Concentration >cPCL
Preliminary Area to Be Excavated within AOC and Consolidated in Soil Cap Area
Railroad Ballast Cap Area
Concrete Cap Area
Proposed Asphalt Cap Area
Notes:
1. Benzo(a)pyrene Residential Assessment Level (RAL)= 0.55 mg/Kg.
2. Benzo(a)pyrene critical PCL (cPCL)= 2.36 mg/Kg (on-site), (cPCL)= 0.55 mg/Kg (off-site).
3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
4. * Excavation not necessary based on representative concentration (i.e., 95% UCL) for the 0.5-acre exposure area.
AOC 6
Ranch
MU 1
N
Approx. Scale in Feet
0 50 100
Source: Base map from ERM-Southwest, Inc AFAR Addendum, Fig 3-1, dated June 2004.
STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
UNION PACIFIC RAILROAD CO.
HOUSTON WOOD PRESERVING WORKS
Figure 2
RESPONSE ACTION DESIGN SOILS
PROJECT: 1356
BY: ADJ
REVISIONS
DATE: SEPT., 2015
CHECKED: ECM
PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

ENCL. 0 SUBJ

APPENDIX 4

PROPOSED INSTITUTIONAL CONTROLS

DEED NOTICE

STATE OF TEXAS §
COUNTY OF § KNOW ALL MEN BY THESE PRESENTS THAT:
HARRIS §

This Notice is filed to provide information concerning certain environmental conditions and/or use restrictions pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described as follows:

(Exhibit A, the legal description of the entire recorded tract of land held by UPRR including the former HWPW Area, Englewood Intermodal Yard, and railroad ballast area)

Portions of the soil and groundwater underlying the Property contain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP. The portion considered to be Affected Property is described as follows:

(The Affected Property is more particularly described by metes and bounds on Exhibit A, attached hereto and incorporated herein by reference, and depicted on the map portion of Exhibit A.)

As detailed in the Response Action Plan (RAP) (PBW, 2014), target COCs in soil and groundwater media were detected within the Affected Property and Protective Concentration Level (PCL) Exceedance (PCLE) Zone in surface and subsurface soils.

PCLE Zones

Soils

Comparing the surface and subsurface soil analytical data to the appropriate critical PCLs, concentrations of 15 COCs exceeded their respective critical PCLs (cPCLs):

Surface Soils	cPCL (mg/kg)	Subsurface Soils	cPCL (mg/kg)
• 1,2-Diphenylhydrazine	• 0.23	• 2-Methylnaphthalene	• 378
• 2,4-Dinitrotoluene	• 0.049	• Benzene	• 0.105
• 2-Methylnaphthalene	• 378	• Naphthalene	• 192
• Benzene	• 0.10	• Pentachlorophenol	• 0.12
• Benzo(a)anthracene	• 23		
• Benzo(a)pyrene	• 2.36		
• Dibenzofuran	• 743		
• Naphthalene	• 189		
• Pentachlorophenol	• 0.12		
• Arsenic	• 200		

Surface Soils	cPCL (mg/kg)	Subsurface Soils	cPCL (mg/kg)
• Lead	• 275		

Groundwater
Based on the maximum groundwater analytical data detailed in the RAP, concentrations of the following 23 target COCs exceeded their critical PCLs (cPCLs):

VOCs	cPCL (mg/L)	SVOCs	cPCL (mg/L)
• Benzene	• 0.005	• 2,4-Dimethylphenol	• 1.5
• Ethylbenzene	• 0.70	• 2,6-Dinitrotoluene	• 0.0013
• Methylene Chloride	• 0.005	• 2-Methylnaphthalene	• 0.29
• Toluene	• 1	• Acenaphthene*	• 4.4
• Vinyl Chloride	• 0.002	• Anthracene *	• 7.3
		• Benzo(a)anthracene	• 0.0028
		• Benzo(a)pyrene	• 0.0002
		• Bis(2-chloroethoxy)methane *	• 0.006
		• Chlorobenzene	•
		• Chrysene *	• 0.28
		• Dibenzofuran	• 0.29
		• Fluoranthene *	• 2.9
		• Fluorene *	• 2.9
		• Naphthalene	• 1.5
		• Pentachlorophenol	• 0.001
		• Phenanthrene *	• 2.2
		• Phenol	• 7.3
		• Pyrene *	• 2.2

* - COC only detected in wells with DNAPL present

Creosote DNAPL has been detected in the groundwater bearing units A-TZ, B-CZ, B-TZ, and C-TZ as noted in soil borings and monitoring wells.

This Notice is required for the following reasons:

Commercial/Industrial Land Use
The Affected Property currently meets TRRP standards for commercial/industrial land use, as the property may not be protective for residential use. If any person desires in the future to use the Property for residential purposes, the TCEQ must be notified at least 60 days in advance of such use and additional response actions may be necessary before the Property may be used for residential purposes. Persons contemplating a change in land use for the Property are encouraged to review the definitions for commercial/industrial and residential land use contained

in TRRP as the definition of residential land use is broad.

Use of Physical Control on Soil

The Affected Property is subject to the TRRP requirements for properties containing concentrations of chemicals of concern in soil and is subject to the requirements in 30 TAC §350.33(e)(2) to prevent exposure to soils that contain a chemical of concern in excess of the protective concentration level. The attached Exhibit B describes and provides the location and metes and bounds of the physical control and extent of the soil that exceeds the TCEQ-approved protective concentration levels for certain chemicals of concern. Physical controls include the following:

- Former HWPW area:
    - Soil Cap Area: To protect on-site commercial/industrial receptors, a vapor barrier with geotextile fabric, and an engineered soil cap (12-in clayey soil, 6-in topsoil) will be constructed to cover the consolidated soil and surface soil PCLE Zone on the former HWPW area. The soil cap will be vegetated (with a pollinator /grass mix to attract pollinators in the area) and sloped to minimize infiltration over the surface/subsurface soil PCLE Zone. The vegetated cap will be maintained under the post-response action care.

    - Asphalt Roadway: For the South Drainage Ditch (SDD) (SWMU 2) along the southern boundary of the HWPW, an asphalt roadway will be constructed to protect on-site commercial/industrial receptors in this area. Construction of the asphalt road will consist of grading the existing road material, compacting and stabilizing the existing road material, and applying a hot mix asphalt cover. The asphalt road will be maintained under the post-response action care.

- Englewood Intermodal Yard area: The surface and subsurface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with impacted soils for on-site workers. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be routinely inspected to ensure on-site worker protection.

- UPRR Main Lines Ballast Area: The area between the former HWPW area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. The existing railroad ballast in this area will be used as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. The railroad ballast area will be maintained as part of normal railroad operations. The track is owned and controlled by UPRR. In the event construction activities are necessary within the railroad ballast area, a health and safety plan will be implemented to ensure worker protection from COCs in the surface soils and a soil management plan will be developed if soils are excavated as part of the construction activities.

The attached Exhibit C also describes the required maintenance and monitoring required for the physical control. This program must be implemented unless and until TCEQ approves any

modification. This deed notice must not be removed or modified without prior approval from TCEQ.

Plume Management Zone

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone (PMZ). A PMZ is defined as an area of groundwater containing concentrations of COCs exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). The undersigned has established a PMZ so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit B provides the location and extent of the PMZ. The Response Action Plan (RAP) submitted for the Site describes the maintenance and monitoring required. The maintenance and monitoring is required until TCEQ approves some modification to those requirements. Exposure to groundwater within the PMZ for any purpose is not advised until such time that all of the chemicals of concern no longer exceed their respective PCLs. This deed notice must not be removed or modified without prior approval from TCEQ.

Non-Aqueous Phase Liquid

The Affected Property is subject to the TRRP requirements for the management of mobile NAPL. The attached Exhibit B provides the location and extent of the NAPL present at the Property. Drilling, excavation, and groundwater pumping within or into the NAPL zone is prohibited unless proper safeguards are taken to protect human health and safety from any hazards associated with the NAPL. Any NAPL removed during any future subsurface activity must be properly handled and managed in accordance with all applicable state and federal rules and regulations. This deed notice must not be removed or modified without prior approval from TCEQ.

As of the date of this notice, the record owner of fee title to the Property is
Union Pacific Railroad, with an address of 1400 Douglas Street, Omaha, Nebraska 68179.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle, Building E
Austin, TX 78753

Mail: TCEQ – MC 199
P.O. Box 13087
Austin, TX 78711-3087

TCEQ Program and Identifier No.: SWR 31547/IHW 50343

This Notice may be rendered of no further force or effect only by a superseding deed notice executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Notice is filed.

EXECUTED this _____ day of _____, 20____.

Union Pacific Railroad [OWNER & RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska

County of _____

My Commission Expires: _____

EXHIBIT "A"
LEGAL DESCRIPTION OF AFFECTED PROPERTY

(to be surveyed following approval of Response Action Plan (RAP))

EXHIBIT "B"
LEGAL DESCRIPTION OF USE OF PHYSICAL CONTROL ON SOIL, EXTENT OF PMZ AND NAPL AREAS

(to be surveyed following approval of Response Action Plan (RAP))

EXHIBIT "C"

MAINTENANCE AND MONITORING OF THE PHYSICAL CONTROLS FOR SURFACE/SUBSURFACE SOIL

EXHIBIT "C"

MAINTENANCE AND MONITORING OF THE PHYSICAL CONTROLS FOR SURFACE/SUBSURFACE SOIL

The cap inspection and maintenance program will be developed to ensure the integrity of the cap and vegetative cover. The maintenance program will consist of the following:

I. Soil Cap Area - HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis and after all major storms. The inspections will focus on the following major issues:

1) Erosion of the cap (gullies, rills, or other erosional features on the cap surface or in drainages)
2) Sideslope sloughing (slippage)
3) Settling/subsidence
4) Vegetation deterioration
5) Damage from animals (i.e., rodents)
6) Groundwater monitoring equipment (wells) (semi-annual basis)

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE COVER AND VEGETATION

The cover and vegetation will be maintained by:

1) Preventing ponding
2) Maintaining design slopes and grades
3) Fertilizing, as necessary
4) Mowing, as necessary
5) Replanting, as necessary
6) Controlling animals (rodents, hogs) and insects

Routine repairs of the cover and maintenance of the slopes and grades will be performed to prevent ponding and drainage problems. Vegetation may require periodic application of fertilizer, mulch or seed. Vegetation will target pollinator seed mixes to attract pollinator species. Mowing will be performed as needed but less frequently than a grass covered cap and only periodically to promote the growth of desired vegetation and to block the growth of trees or shrubs which could penetrate the cover soil with their roots.

EROSION CONTROL

Maintenance of the drainage and diversion portions of the cap will be performed. Erosion of soil by water and/or wind will be repaired as soon as practicable.

II. Asphalt Roadway Area – HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Erosion of the asphalt roadway (potholes, exposed soils)
2) Settling/subsidence

3) Cracks in asphalt roadway

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE ASPHALT ROADWAY

The asphalt cover will be maintained by:

1) Crack repair/sealing;
2) Pothole patching; and
3) Controlling vegetation.

III. Concrete Pavement – Englewood Intermodal Yard (On-Site)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Step separation in the concrete;
2) Settling/subsidence;
3) Cracks in the concrete; and
4) Openings in the pavement.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE CONCRETE SIDEWALK/PAVEMENT

The concrete pavement will be maintained by:

1) Crack repair/sealing;
2) Replacing panels as needed; and
3) Controlling vegetation growing through cracks/along edges of sidewalk.

IV. Railroad Ballast Area – (HWPW/Englewood Intermodal Yard)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

1) Ballast removed with exposed soil.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE RAILROAD BALLAST

The railroad ballast will be maintained by:

1) Adding railroad ballast where areas of soil are exposed;
2) Controlling vegetation.

The ballast areas will be maintained in accordance with UPRR Engineering Standards for Roadbase Section for Wood Tie Track Construction (UPRR, 2006).

GROUNDWATER MONITORING

Groundwater monitoring will be conducted per the Groundwater Monitoring Plan described on RAP Worksheet 3.1. Sample data from the AMPs will be compared to the AALs, as well as data from the POE wells compared to the applicable cPCLs. The results of groundwater monitoring will be submitted annually in the PRACR.

RESTRICTIVE COVENANT

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS THAT:
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

(The legal description of the entire recorded tract of land held by the owner executing this restrictive covenant, will be inserted here, with Exhibit 1 showing a map of the property. An example would be:

Lot Ten (10), in Block Five (5), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas. Map ID 12, Tax ID# 014-143-000-0010)

Portions of the groundwater underlying the Property contain certain identified chemicals of concern (COCs) causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP. The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

> The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is_____ (Owner) with an address of _____.
In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place

the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 3 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this _____day of _____, 2014.

[OWNER]
By: _____
Name: _____
Title: _____

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the _____ day of _____, 2015, personally appeared _____, _____, of [owner], known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the _____ day of _____, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

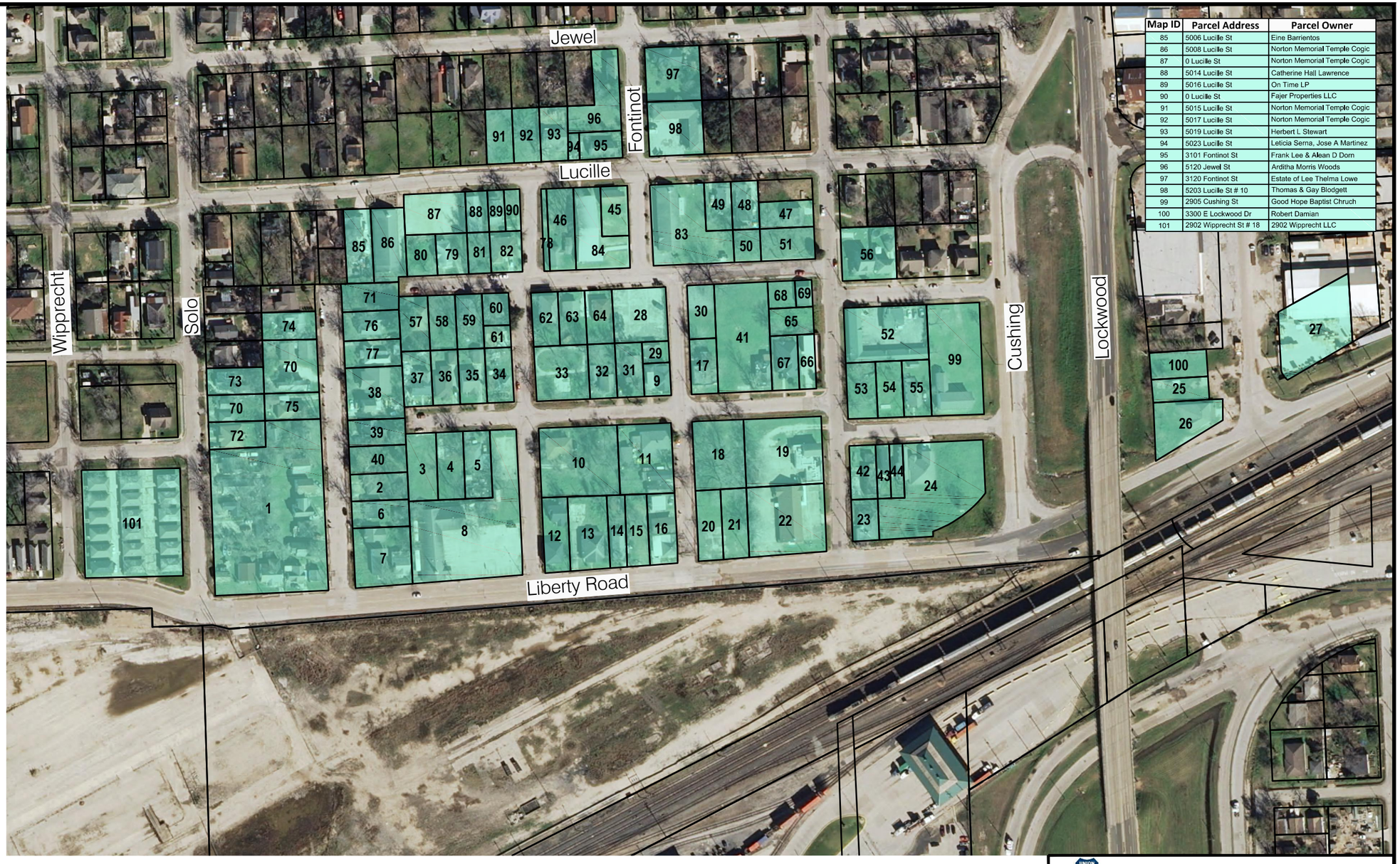
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

Map ID	Parcel Address	Parcel Owner
3	0 Wylie St	Greater Mt Nebo Baptist Church
4	5006 Wylie St	Greater Mt Nebo Baptist Church
5	5010 Wylie	Alberta Smith
6	2906 Lavender St	Jessie and Eloise Beal
8	505 Liberty	Greater Mount Nebo Baptist Church
9	5119 Wylie St	Martha Gilliam
11	2813 Fontinot St	Jose Alexander & Reina Isabel Coto
16	5117 Liberty Rd	Jorge D Rivera
18	5201 Wylie St	Charity Baptist Church
19	2809 Erastus St	Charity Baptist Church
20	5201 Liberty Rd	Charity Baptist Church
21	5201 Liberty Rd	Charity Baptist Church
22	2809 Erastus St	Charity Baptist Church C/O Rev F W Mcilveen
24	5311 Liberty Rd	Elmer Preston Trust
28	5118 Lelia St	Greater True Vine Baptist Church
30	0 Lelia St	Greater True Vine Missionary Baptist Church
31	5111 Wylie St	Aquilina Perez
32	5107 Wylie St	Reginald & Leticia Tolbert
33	5105 Wylie St	Maryland Potts Estate
35	5011 Wylie St	J.C. Carr and Carrie Mae Carr
37	5005 Wylie St	Monico Duque & Martha Zuiga Banda
38	2926 Lavender St	Clark Investment Co
40	2922 Lavender St	Greater MT. Nebo Baptist Church
41	5202 Lelia St	Greater True Vine Mbc
43	5304 Wylie St	Irene Perez Juarez
44	5304-1/2 Wylie St	Saturnino Delgado and Susie I Delgado
45	3013 Fontinot St	Lenora Young and Clifton Scott
46	705 Lucille	Joyce Marie Taylor
47	3009 Erastus St	Mary Elizabeth Crowley
50	0 Lelia St	Percy Vital
51	3005 Erastus St	Jose Raymundo Govea
52	5301 Lelia St	Ambe Sai, LLC
54	5303 Wylie St	Shannon Leo Lund
56	5703 Lelia St	Lashameka and Derrick Williams
57	5008 Lelia St	Emitt Holmes
59	5014 Leila	Guadalupe Rivera Jr. & Flor Estela Rivera
60	2421 Clementine	Rogelio Ruiz & Olivia Pineda
65	0 Lelia St	Mallie Pittman & Belinda Pittman
66	5211 Wylie	Sterling Trust for benefit of Charles Mock
67	0 Wylie	Sterling Trust for benefit of Charles Mock
68	0 Lelia St	Leroy Mock
69	2925 Erastus St	Leroy Mock
74	2937 Lavender St	Francis A Wyatt
76	2938 Lavender St	Essie Lee Hutchins
79	5009 Lelia St	Clara Christinar Humphrey
80	5007 Lelia St	Johnnie M York
81	0 Lelia St	Herbert Hall
83	3010 Fontinot	Greater True Vine Baptist Church
84	3011 Fontinot	Greater True Vine Baptist Church
10	2820 Clementine St	Estate Of Tillie Potts Benson
13	5105 Liberty Rd	Alejandro Gonzalez
14	5109 Liberty Rd	Mary Jane Gonzalez, Daniel Martinez, Guadalupe Mata, Joe H. Martinez, Jr. and Isabel Gallegos
23	5301 Liberty Rd	Geneva Henry, a/k/a Geneva Crump
36	5007 Wylie St	Andrew Jerry & Rebecca Johnson
48	5212 Lucille St	Jose F & Yolanda Ruiz
58	5010 Lelia St	Dickson Investment Company
75	2925 Lavender St	Johnnie Ellis
82	5015 Lelia St	Manuel Castillo
12	5101 Liberty Rd	Robert & Janie Longoria
42	2806 Erastus St	Margaret Roberts, Etal
61	0 Lelia St	Guadalupe Rivera
62	2920 Clementine St	Amidee Capital Group, LLC
71	2942 Lavender St	Sandra Rena Thompson
55	5305 Wylie St	Victor Delgado Ibarra
1	2909 Lavender St	Clark Investment Co
2	2910 Lavender St	Ray Carrington
7	2904 Lavender St	Clark Investment Co
15	5113 Liberty Rd	Harris County Cause No 2003-22512
53	0 Wylie	Harris County ET AL Cause NO 2005-18299
70	2909 Lavender St	Clark Investment Co
72	2922 Solo St	Gerry Wortham
17	5201 Wylie St	A.E. Dixon Ford
25	3300 E Lockwood Dr	Eliuth Jimenez Damian - et al.
26	3300 E Lockwood Dr	Eliuth Jimenez Damian - et al.
29	2913 Fontinot St	The heirs and devisees of Perez Paul M
34	2901 Clementine St	Mary Bass Ross
39	2924 Lavender St	Clark Investment Co
49	5210 Lucille St	Alfred B & Freddie Randolph
63	5116 Lelia St	Elizabeth Thomas
64	5112 Lelia St	Estate of Francis Potts
73	2930 Solo St	Barbara A Jackson
77	2934 Lavender St	Clark Investment Co
78	Leila St	Frank Lippow



Map ID	Parcel Address	Parcel Owner
85	5006 Lucille St	Eine Barrientos
86	5008 Lucille St	Norton Memorial Temple Cogic
87	0 Lucille St	Norton Memorial Temple Cogic
88	5014 Lucille St	Catherine Hall Lawrence
89	5016 Lucille St	On Time LP
90	0 Lucille St	Fajer Properties LLC
91	5015 Lucille St	Norton Memorial Temple Cogic
92	5017 Lucille St	Norton Memorial Temple Cogic
93	5019 Lucille St	Herbert L Stewart
94	5023 Lucille St	Leticia Serna, Jose A Martinez
95	3101 Fontinot St	Frank Lee & Alean D Dorn
96	5120 Jewel St	Arditha Morris Woods
97	3120 Fontinot St	Estate of Lee Thelma Lowe
98	5203 Lucille St # 10	Thomas & Gay Blodgett
99	2905 Cushing St	Good Hope Baptist Chruch
100	3300 E Lockwood Dr	Robert Damian
101	2902 Wipprecht St # 18	2902 Wipprecht LLC

EXPLANATION

UPRR Property Boundary

Off-Site Properties Needing IC for PMZ

N

Scale in Feet

0 100 200

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 1

OFF-SITE NOTIFICATION PROPERTIES

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

RESTRICTIVE COVENANT

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS THAT:
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

(The legal description of the entire recorded tract of land held by the owner executing this restrictive covenant, will be inserted here, with Exhibit A showing a map of the property. An example would be:

The following Municipal City of Houston Right-of-Way (ROW) by city block and street within the following Subdivisions and shown on Exhibit A:

Block	***Street/ROW***	***Subdivision***
5006-5212	***Lucile***	***Fairgrounds Park Annex*** ***Fairgrounds Park***
5002-5300	***Lelia***	***Fairgrounds Park Annex*** ***Fairgrounds Park***
5005-5300	***Wylie***	***Gange Homestead*** ***Fairgrounds Park***
4900-5525	***Liberty***	***Augusta*** ***Liberty Road Estates (Abst 32 Harris & Wilson)*** ***Gange Homestead*** ***Fairground Park*** ***Kashmere Gardens Annex***
5300-5400	***Sudan***	***Englewood***
2700-2800	***Kashmere***	***Augusta***
2900-2942	***Lavender***	***Liberty Road Estates (Abst 32 Harris & Wilson)***
2800-3000	***Clementine***	***Gange Homestead*** ***Fairgrounds Park Annex*** ***Includes Parcel 0522570000025 (TRS 1A & 10A BLK 6***
2800-3200	***Fontinot***	***Gange Homestead*** ***Fairgrounds Park***
2400-2500 ***2800-3012***	***Erastus***	***Englewood*** ***Fairgrounds Park***
2500-2600	***Harlem***	***Englewood***
2800-2905	***Cushing***	***Fairgrounds Park***

DRAFT

Block	***Street/ROW***	***Subdivision***
2516-3320	***Lockwood***	***Englewood*** ***Kashmere Gardens Annex***
3300-3320	***E. Lockwood***	***Kashmere Gardens Annex***

Portions of the groundwater underlying the Property contain certain identified chemicals of concern (COCs) causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP. The portion considered to be Affected Property is described on Exhibit B, which is part of the plume management zone shown in Exhibit C attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

Plume Management Zone

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit C provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

Use of Physical Control on Soil

The Affected Property is subject to the TRRP requirements for properties containing concentrations of chemicals of concern in soil and is subject to the requirements in 30 TAC §350.33(e)(2) to prevent exposure to soils that contain a chemical of concern in excess of the protective concentration level. The attached Exhibit D describes and provides the location of the physical control and extent of the soil that exceeds the TCEQ-approved protective concentration levels for certain chemicals of concern. The attached Exhibit D also provides the reason the physical control must remain in place, and describes the required maintenance and monitoring required for the physical control. This program must be implemented unless and until TCEQ approves any modification.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is City of Houston (Owner) with an address of _____. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place

DRAFT

the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit C is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. The removal or modification of the physical control on the Affected Property is prohibited without prior approval from TCEQ and the physical control must be maintained and monitored as described in Exhibit D. Removal or modification of this restrictive covenant is prohibited without prior approval of TCEQ.

3. These restrictions shall be a covenant running with the land.

DRAFT

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this _____day of _____, 20__.

City of Houston [OWNER]
By: _____
Name: _____
Title: _____

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____[name]_____, _____[title]_____, of City of Houston, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the _____ day of _____, 201__.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

DRAFT

Executed this _____day of _____, 20___.

Union Pacific Railroad Company [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §

DOUGLAS COUNTY §

BEFORE ME, on this the ___ day of _____, Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation [**responder**], known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

DRAFT

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
(_____) COUNTY §

BEFORE ME, on this the ___ day of _____, _____ personally appeared _____ [name], _____ [title], of The Texas Commission of Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this _____ day of _____, 20____.

_____

Notary Public in and for the State of Texas,
County of _____
My Commission Expires: _____

DRAFT

EXHIBIT A

PROPERTY MAP

DRAFT

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ

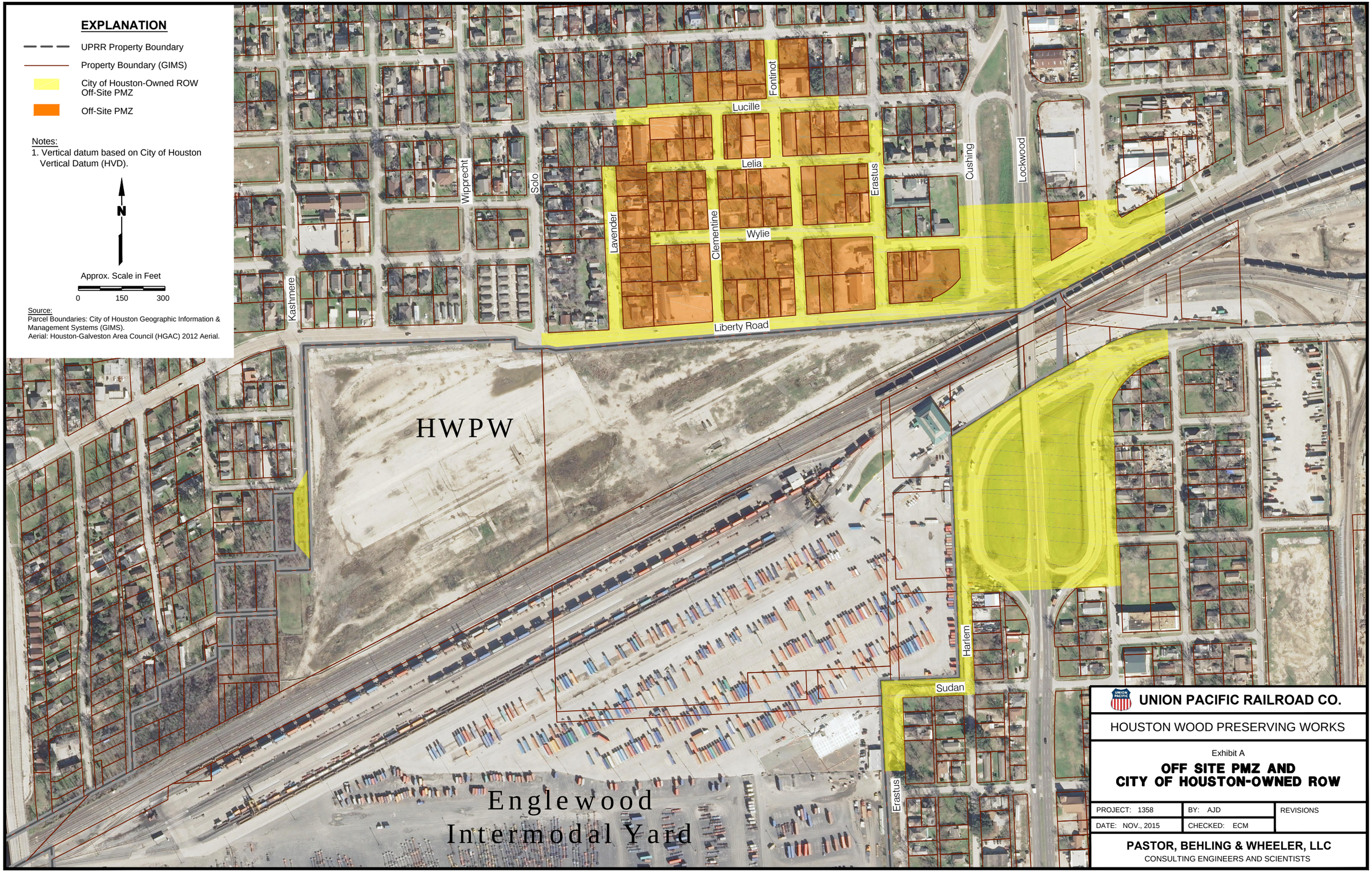
Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.



UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit A

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT B

AFFECTED PROPERTY MAP

DRAFT

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

PMW-83B, PMW-83C, PMW-84B, **PMW-82B, MW-67B, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-32B, MW-70B, MW-35B**, MW-35A, MW-36B, MW-36A, MW-34CR, MW-44A (DNAPL), MW-45C, MW-46C (DNAPL), MW-54C, MW-25A, MW-44C (DNAPL), MW-18AR, MW-57A (DNAPL), MW-60A, MW-15C, MW-15A, MW-17C, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-22BR**, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-22AR**, MW-07, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit B

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT C

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-49B
MW-48C
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit C

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "C"
MAINTENANCE AND MONITORING

Regular sampling of monitoring wells listed in the table below for chemicals of concern (COCs) (see Table C-1) will occur on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-82B (proposed)	***PMW-83C (proposed)***
	PMW-83B (proposed)	
	PMW-84B (proposed)	

DRAFT

EXHIBIT D

USE OF PHYSICAL CONTROL ON SOIL MAP AND MAINTENANCE/MONITORING REQUIREMENTS

DRAFT

LEGEND

- UPRR Property Boundary
- Existing Grade Contour (0.5 ft Interval)
- Existing Grade Contour (1 ft Interval)
- Proposed Grade Contour (0.5 ft Interval)
- Proposed Grade Contour (1 ft Interval)
- Existing Fence
- Existing Fire Hydrant
- Existing Manhole
- Existing Power Pole
- Overhead Electric Line
- Existing Guy Wire
- Proposed Sidewalk
- Extent of Soil Cap

N

Scale in Feet

0 40 80

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit D

PROPOSED PHYSICAL CONTROL FOR SOIL PROPOSED SIDEWALK ALONG SOUTHSIDE OF LIBERTY ROAD (5100-5300 BLOCK)

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "D"
MAINTENANCE AND MONITORING

An inspection and maintenance program will be implemented for the concrete sidewalk along the south side of Liberty Road ((5100 - 5300 Block) as shown on Exhibit D). Inspections will be performed on a semi-annual basis. The inspections will focus on evaluating the sidewalk for cracks or damage. If cracks are identified that allow exposure to the underlying soils, the cracks will be repaired and sealed. Semi-annual inspections will be documented in the annual reporting to the TCEQ.

DRAFT

APPENDIX 5A

LAND OWNER CONCURRENCE - RESTRICTIVE COVENANTS SIGNED

BAKER WOTRING LLP

PRIVILEGED & CONFIDENTIAL
MEMORANDUM

TO: Eric C. Matzner, P.G.

FROM: Paul Shanklin

DATE: December 22, 2015

RE: Union Pacific Railroad – Houston Wood Preserving Works, TCEQ SWR No. 31547/IHW Permit/Compliance Plan No. 50343 - Summary of Good-Faith efforts to identify and locate property owners regarding in connection with restrictive covenant

---

The Environmental team at Union Pacific has been working to obtain consent from landowners located in the area of affected groundwater to place restrictive covenants on their properties since August 2014, with the beginning developments of the Plume Management Zone (PMZ). Prior to contacting landowners, Title Reports were prepared by Texas American Title Company from the real property records for the properties in the area of the PMZ. In late August 2014, on behalf of Union Pacific, outside counsel for Union Pacific (now "Baker Wotring") sent letters by regular and certified mail to landowners identified as having property in the PMZ. The letter complied with the requirements of 30 T.A.C. § 350.111(c) and included a copy of the restrictive covenant. Baker Wotring then contacted Ministers and Pastors that have churches and congregations in the affected neighborhood to arrange a community meeting. Baker Wotring contracted with local residents to distribute flyers throughout the affected area informing the property owners of a meeting to discuss the effect of contaminants found on their property. The informational flyers were placed on every piece of property located within the PMZ.

The community meeting took place at the Greater True Vine Baptist Church on September 11, 2014 and approximately 189 persons attended the meeting. The Environmental team of UP attorneys, staff and outside counsel (collectively the "Team") explained to the residents that ***none*** of the properties in the area use the groundwater for drinking; rather, they are on city drinking water provided by the City of Houston. None of the City of Houston groundwater supply wells are in the area of the Site. In addition, no groundwater drinking wells have been identified in the area. The Team further explained that in order to ensure that the shallow groundwater is not used in the future, the Team was contacting the landowners in the area to request that they execute a restrictive covenant which would prohibit use of the shallow groundwater on their property. The residents were informed that the restrictive covenant would be filed in the property records as part of planned work at the site to institute a Plume Management Zone. The Team answered questions from the local residents well into the evening. Maps were displayed identifying the affected properties that Union Pacific was asking to be

subject to the restrictive covenants. Title documents which indicated the rightful owners were also provided.

The Team took names and addresses of the owners and made arrangements with each owner to meet them individually to explain the need for the restrictive covenant and to make sure each person claiming ownership had the proper documentation to execute the covenant. Since September 11, 2014, Team members have made visits to the community on over 150 occasions and spoken to over 200 people who have claimed ownership in properties within the PMZ. There has been no community opposition to placing the restrictive covenant on the deed records. To date approximately 72% of owners have notarized documents indicating their agreement with the deed recordation. Despite these efforts, there are still some properties for which ownership cannot be determined or where owners cannot be located.

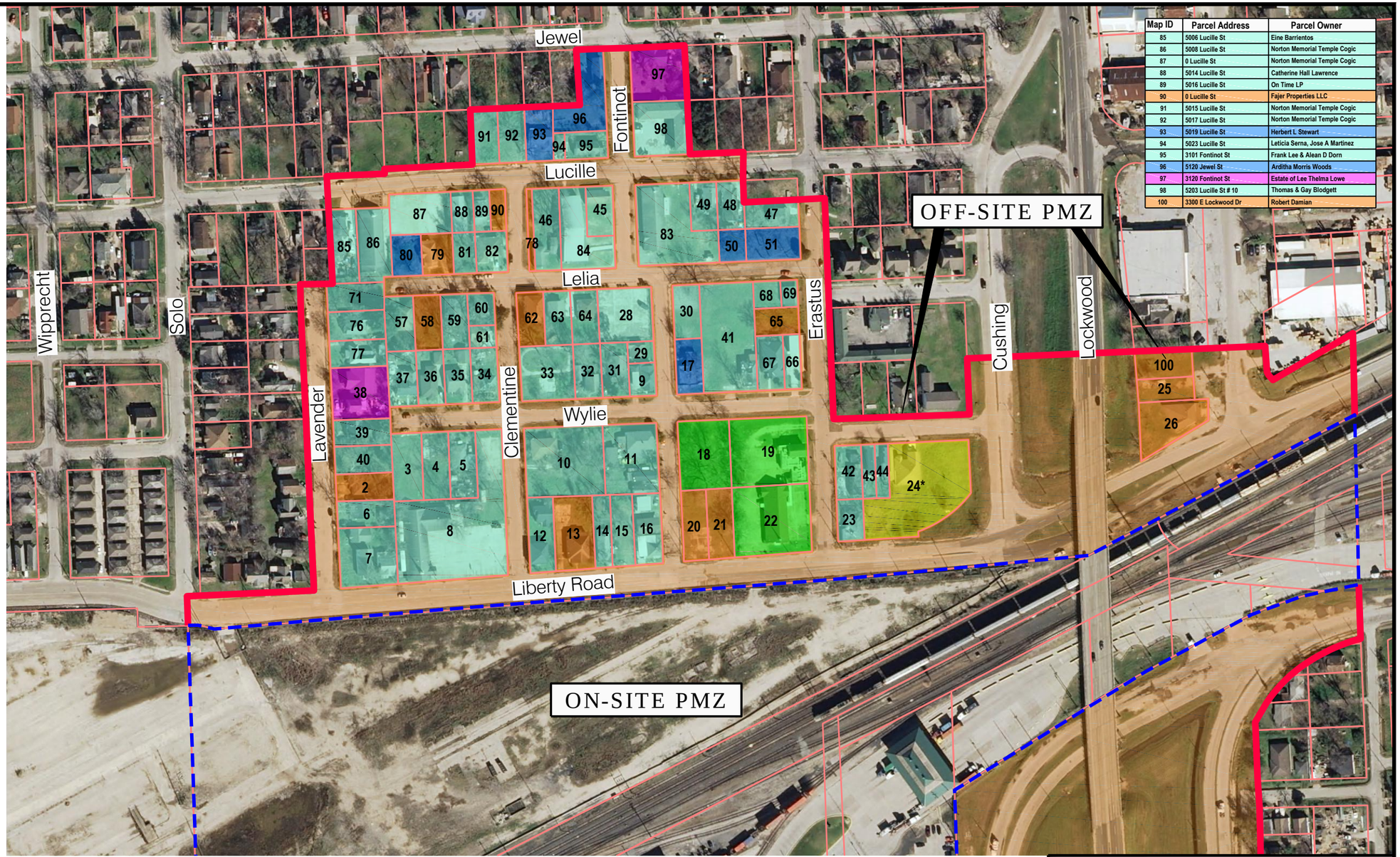
APPENDIX 5 - TABLE 1
SUMMARY OF OFF-SITE PROPERTIES FOR RESTRICTIVE COVENANTS - UPDATE DECEMBER 2015
UPRR HOUSTON WOOD PRESERVING WORKS

MAP ID[c]	HCAD ID[a]	PARCEL ADDRESS	PARCEL OWNER	OWNER MAILING ADDRESS	SIGNED RESTRICTIVE CONVENANT	IF NO, REASON
2	0402660100004	2910 Lavender St, Houston,TX 77026	Ray Carrington	4102 Waterstone St, Missouri City, TX 77459-1837	NO	Cannot locate Owner
3	0141440000001	0 Wylie St, Houston,TX 77026	Greater Mt Nebo Baptist Church	5005 Liberty Rd, Houston, TX 77026-5217	YES	
4	0141440000002	5006 Wylie St, Houston,TX 77026	Greater Mt Nebo Baptist Church	2602 Caplin St, Houston, TX 77026-1104	YES	
5	0141440000003	5010 Wylie, Houston,TX 77026	Alberta Smith	5010 Wylie St, Houston, TX 77026-5226	YES	
6	0402660100003	2906 Lavender St, Houston,TX 77026	Eloise Beal	2906 Lavender St, Houston, TX 77026-5212	YES	
7	0402660100001	2904 Lavender St, Houston,TX 77026	Clark Investment Co	4901 Liberty Rd, Houston, TX 77026-5263	YES	
8	0141440000004	505 Liberty, Houston,TX 77026	Greater Mount Nebo Baptist Church	4511 Eddie St, Houston, TX 77026-7610	YES	
9	0141400000006	5119 Wylie St, Houston,TX 77026	Martha Gilliam	5119 Wylie St, Houston, TX 77026-5227	YES	
10	0141430000001	2820 Clementine St, Houston,TX 77026	Estate Of Tillie Potts Benson	2820 Clementine St, Houston, TX 77026-5202	YES	
11	0141430000004	2813 Fontinot St, Houston,TX 77026	Jose A & Reina I Coto	2819 Fontinot St, Houston, TX 77026-5205	NO	Pending/Owner has documents
12	0141430000010	5101 Liberty Rd, Houston,TX 77026	Janie & Wallace Longoria	1510 Beall St, Houston, TX 77008-3444	NO	Heirship issues
13	0141430000008	5105 Liberty Rd, Houston,TX 77026	Alejandro Gonzalez	4088 Pamela Way, Montgomery, TX 77316-2779	NO	Landlord/owner cannot be located
14	0141430000007	5109 Liberty Rd, Houston,TX 77026	Joe H Martinez	5109 Liberty Rd, Houston, TX 77026-5218	NO	Cannot locate Owner
15	0141430000011	5113 Liberty Rd, Houston,TX 77026	Harris County Cause No 2003-22512	PO Box 1525, Houston, TX 77251-1525	NO	Tax Court
16	0141430000006	5117 Liberty Rd, Houston,TX 77026	Jorge D Rivera	5117 Liberty Rd, Houston, TX 77026-5218	YES	
17	0141410000010	5201 Wylie St, Houston,TX 77026	Doris Jean Jefferson	PO Box 23611, Houston, TX 77228-3611	NO	Multiple heirs/No grant of Power of Attorney
18	0141420000001	5201 Wylie St, Houston,TX 77026	Charity Baptist Church	5217 Liberty Rd, Houston, TX 77026-5313	NO	Pastor cannot get authority from his board
19	0141420000003	2809 Erastus St, Houston,TX 77026	Charity Baptist Church C/O Rev F W Mcilveen	2809 Erastus St, Houston, TX 77026-5303	NO	pastor cannot get authority from his board
20	0141420000009	5201 Liberty Rd, Houston,TX 77026	Full Gospel Christian Assn	5201 Liberty Rd, Houston, TX 77026-5313	NO	Cannot locate Owner
21	0141420000008	5201 Liberty Rd, Houston,TX 77026	Full Gospel Christian Assn	5201 Liberty Rd, Houston, TX 77026-5313	NO	Cannot locate Owner
22	0141420000006	2809 Erastus St, Houston,TX 77026	Charity Baptist Church C/O Rev F W Mcilveen	2809 Erastus St, Houston, TX 77026-5303	NO	Pastor cannot get authority from his board
23	0140410000007	5301 Liberty Rd, Houston,TX 77026	Geneva Henry	7546 S Hall St, Houston, TX 77028-2410	YES	
24	0140410000002	5311 Liberty Rd, Houston,TX 77026	Elmer Preston Trust	3319 Liberty Rd , Houston, TX 77026-6238	NO	Trustee in communication with Beneficiaries
25	0651290800937	3300 E Lockwood Dr, Houston,TX 77026	Robert Damian	3300 E Lockwood Dr, Houston, TX 77026-1811	NO	Cannot locate Owner
26	0402600000019	3300 E Lockwood Dr, Houston,TX 77026	Robert Damian	7938 Capitol St, Houston, TX 77012-1649	NO	Cannot locate Owner
28	0141400000004	5118 Lelia St, Houston,TX 77026	Greater True Vine Baptist Church	3010 Fontinot St, Houston, TX 77026-5210	YES	
29	0141400000010	2913 Fontinot St, Houston,TX 77026	Perez Paul M	2913 Fontinot S, Houston, TX 77026-5210	NO	Cannot locate Owner
30	0141410000002	0 Lelia St, Houston,TX 77026	Greater True Vine Missionary Baptist Church	3010 Fontinot St, Houston, TX 77026-5210	YES	
31	0141400000007	5111 Wylie St, Houston,TX 77026	Aquilina Perez	5111 Wylie St, Houston, TX 77026-5227	NO	Tenant attempting to locate Owner
32	0141400000008	5107 Wylie St, Houston,TX 77026	Reginald & Leticia Tolbert	5107 Wylie St, Houston, TX 77026-5227	NO	Heirship issues
33	0141400000009	5105 Wylie St, Houston,TX 77026	Maryland Potts Estate	6308 Crane St, Houston, TX 77026-4318	YES	
34	0141390000005	2901 Clementine St, Houston,TX 77026	Mary Bass Ross	2901 Clementine St, Houston, TX 77026-5203	YES	
35	0141390000006	5011 Wylie St, Houston,TX 77026	Estate Of Carrie Mae Carr	5011 Wylie St, Houston, TX 77026-5225	NO	Heirship issues
36	0141390000007	5007 Wylie St, Houston,TX 77026	Andrew J Johnson	5007 Wylie St, Houston, TX 77026-5225	YES	
37	0141390000008	5005 Wylie St, Houston,TX 77026	Banda Monico Duque & Martha Z	5005 Wylie St, Houston, TX 77026-5225	YES	
38	0402660100018	2926 Lavender St, Houston,TX 77026	Clark Investment Co	4901 Liberty Rd, Houston, TX 77026-5263	NO	Tax Court
39	0402660100022	2924 Lavender St, Houston,TX 77026	**Clark Investment Co**	2924 Lavender St, Houston, TX 77026-5212	YES	
40	0402660100005	2922 Lavender St, Houston,TX 77026	**Greater Mt Nebo Baptist Church**	2922 Lavender St, Houston, TX 77026-5212	YES	
41	0141410000001	5202 Lelia St, Houston,TX 77026	Greater True Vine Mbc	3010 Fontinot St, Houston, TX 77026-5210	YES	
42	0140410000006	2806 Erastus St, Houston,TX 77026	Margaret Roberts, Etal	3802 Lochmire Ln, Houston, TX 77039-2523	YES	
43	0140410000013	5304 Wylie St, Houston,TX 77026	Irene Perez Juarez	20726 I A Cote Cir Spring, Spring, TX 77388	YES	
44	0140410000005	5304-1/2 Wylie St, Houston,TX 77026	Susie I Delgado	5304 1/2 Wylie St, Houston, TX 77026-5322	YES	
45	0140330000001	3013 Fontinot St, Houston,TX 77026	**Clifton Scott and Lenora Young**	1111 Heath Ct, Houston, TX 77016	YES	
46	0140330000003	705 Lucille, Houston,TX 77026	Taylor Crawford	5105 Lelia St, Houston, TX 77026-5215	YES	
47	0140400000002	3009 Erastus St, Houston,TX 77026	Mary Crowley	3009 Erastus St, Houston, TX 77026-5307	YES	
48	0140400000003	5212 Lucille St, Houston,TX 77026	Jose F & Yolanda Ruiz	5212 Lucille St, Houston, TX 77026-5316	YES	
49	0140400000004	5210 Lucille St, Houston,TX 77026	Alfred B & Freddie Randolph	8614 Shotwell St, Houston, TX 77016-5912	YES	
50	0140400000010	0 Lelia St, Houston,TX 77026	Percy Vital	304 Sandman Ave, Crosby, TX 77532-6244	NO	Heirship issues
51	0140400000013	3005 Erastus St, Houston,TX 77026	Frank Thomas	3005 Erastus St, Houston, TX 77026-5307	NO	Heirship issues
57	0141390000001	5008 Lelia St, Houston,TX 77026	Emitt Holmes	5002 Lelia St, Houston, TX 77026-5214	YES	
58	0141390000002	5010 Lelia St, Houston,TX 77026	Nicholas R Alvarado	3410 Chapman St, Houston, TX 77009-5812	NO	Cannot locate Owner
59	0141390000003	5014 Leila, Houston,TX 77026	**Guadalupe Rivera Jr and Flor Rivera**	5014 Lelia St, Houston, TX 77026-5214	YES	
60	0141390000004	2421 Clementine, Houston,TX 77026	Rogelio R & Olivia Pineda	2921 Clementine St, Houston, TX 77026-5203	YES	
61	0141390000009	0 Lelia St, Houston,TX 77026	Guadalupe Rivera	3401 Erastus St, Houston, TX 77026-5335	YES	
62	0141400000001	2920 Clementine St, Houston,TX 77026	Jack Perkins	2920 Clementine St, Houston, TX 77026-5204	NO	Cannot locate Owner
63	0141400000002	5116 Lelia St, Houston,TX 77026	Carter Thomas	5108 Lelia St, Houston, TX 77026-5216	YES	
64	0141400000003	5112 Lelia St, Houston,TX 77026	Avie Potts	5112 Lelia St, Houston, TX 77026-5216	YES	
65	0141410000004	0 Lelia St, Houston,TX 77026	Mallie Pittman	6127 Westover St, Houston, TX 77033-1235	NO	Cannot locate Owner
66	0141410000006	5211 Wylie, Houston,TX 77026	Sterling Trust Company for the benefit of Charles Mock	5207 Jewel St, Houston, TX 77026-5345	YES	
67	0141410000007	0 Wylie, Houston,TX 77026	Sterling Trust Company for the benefit of Charles Mock	5207 Jewel St, Houston, TX 77026-5345	YES	
68	0141410000011	0 Lelia St, Houston,TX 77026	Leroy Mock	5207 Jewel St, Houston, TX 77026-5345	YES	
69	0141410000012	2925 Erastus St, Houston,TX 77026	Leroy Mock	5207 Jewel St, Houston, TX 77026-5345	YES	
71	0402660100008	2942 Lavender St, Houston,TX 77026	Sandra Rena Thompson	PO Box 671646, Houston, TX 77267-1646	NO	Owner has documents but have not executed
76	0402660100019	2938 Lavender St, Houston,TX 77026	Essie Lee Hutchins	2938 Lavender St, Houston, TX 77026-5212	YES	
77	0402660100021	2934 Lavender St, Houston,TX 77026	Clark Investment Co	2934 Lavender St, Houston, TX 77026-5212	YES	
78	0522570000001	Leila St, Houston,TX 77026	Samuel J Schrinsky	152 W Wisconsin Ave, Milwaukee, WI 53203-2508	NO	Cannot locate Owner
79	0522570000006	5009 Lelia St, Houston,TX 77026	Clara C Humphrey	5009 Lelia St, Houston, TX 77026-5213	NO	Cannot locate Owner
80	0522570000007	5007 Lelia St, Houston,TX 77026	Johnnie M York	9231 Oak Knoll Ln, Houston, TX 77078-4025	NO	Heirship issues

APPENDIX 5 - TABLE 1
SUMMARY OF OFF-SITE PROPERTIES FOR RESTRICTIVE COVENANTS - UPDATE DECEMBER 2015
UPRR HOUSTON WOOD PRESERVING WORKS

MAP ID[c]	HCAD ID[a]	PARCEL ADDRESS	PARCEL OWNER	OWNER MAILING ADDRESS	SIGNED RESTRICTIVE CONVENANT	IF NO, REASON
81	0522570000008	0 Lelia St, Houston,TX 77026	Herbert Hall	5014 Lucille St, Houston, TX 77026-5222	YES	
82	0522570000009	5015 Lelia St, Houston,TX 77026	**Manuel Castillo**	5015 Lelia St, Houston, TX 77026-5213	YES	
83	1280850010001	3010 Fontinot, Houston,TX 77026	Greater True Vine Baptist Church	3010 Fontinot St, Houston, TX 77026-5210	YES	
84	1280850020001	3011 Fontinot, Houston,TX 77026	Greater True Vine Baptist Church	3011 Fontinot St, Houston, TX 77026-5210	YES	
85	0402660010007	5006 Lucille St, Houston,TX 77026	Eine Barrientos	5006 LUCILLE ST Houston , TX 77026-5222	YES	
86	0402660010008	5008 Lucille St, Houston,TX 77026	Norton Memorial Temple Cogic	5008 LUCILLE ST Houston , TX 77026-5222	YES	
87	0522570000004	0 Lucile, Houston,TX 77026	Norton Memorial Temple Cogic	5008 LUCILLE ST Houston , TX 77026-5222	YES	
88	0522570000003	5014 Lucille St, Houston,TX 77026	Catherine Hall Lawrence	5014 LUCILLE ST Houston , TX 77026-5222	YES	
89	0522570000002	5016 Lucille St, Houston,TX 77026	On Time Lp	2141 W GOVERNORS CIR Houston , TX 77092-8715	NO	Docments with partnership pending execution
90	0522570000012	0 Lucille, Houston,TX 77026	Fajer Properties Llc	8621 WESTHEIMER RD Houston , TX 77063-4201	NO	Cannot locate Owner
91	0522560000009	5015 Lucille St, Houston,TX 77026	Norton Memorial Temple Cogic	5008 LUCILLE ST Houston , TX 77026-5222	YES	
92	0522560000010	5017 Lucille St, Houston,TX 77026	Norton Memorial Temple Cogic	5008 LUCILLE ST Houston , TX 77026-5222	YES	
93	0140340000010	5019 Lucille St, Houston,TX 77026	Herbert L Stewart	4029 MELBOURNE ST Houston , TX 77026-1547	NO	Heirship issues
94	0140340000013	5023 Lucille St, Houston,TX 77026	Leticia Serna, Jose A Martinez	12414 PINE GLEN LN Cypress, TX 77429-2815	YES	
95	0140340000011	3101 Fontinot St, Houston,TX 77026	Frank Lee & Alean D Dorn	3101 FONTINOT ST Houston , TX 77026-5245	YES	
96	0140340000001	5120 Jewel St, Houston,TX 77026	Arditha Morris Woods	5120 JEWEL ST Houston , TX 77026-5254	NO	Heirship issues
97	0140390000005	3120 Fontinot St, Houston,TX 77026	Estate Of Lee Thelma Lowe	3120 FONTINOT ST Houston , TX 77026-5246	NO	Probate Court
98	0140390000007	5203 Lucille St # 10, Houston,TX 77026	Thomas & Gay Blodgett	17 STONEWALL IRVINE, CA 92620-2649	YES	
100	0651290800938	3300 E Lockwood Dr, Houston,TX 77026	Robert Damian	3300 E Lockwood Dr Houston, TX 77026-1811	NO	Cannot locate Owner

Map ID	Parcel Address	Parcel Owner
2	2910 Lavender St	Ray Carrington
3	0 Wylie St	Greater Mt Nebo Baptist Church
4	5006 Wylie St	Greater Mt Nebo Baptist Church
5	5010 Wylie	Alberta Smith
6	2906 Lavender St	Jessie and Eloise Beal
7	2904 Lavender St	Clark Investment Co
8	505 Liberty	Greater Mount Nebo Baptist Church
9	5119 Wylie St	Martha Gilliam
10	2820 Clementine St	Estate Of Tillie Potts Benson
11	2813 Fontinot St	Jose Alexander & Reina Isabel Coto
12	5101 Liberty Rd	Robert & Janie Longoria
13	5105 Liberty Rd	Alejandro Gonzalez
14	5109 Liberty Rd	Mary Jane Gonzalez, Daniel Martinez, Guadalupe Mata, Joe H. Martinez, Jr. and Isabel Gallegos
15	5113 Liberty Rd	Harris County Cause No 2003-22512
16	5117 Liberty Rd	Jorge D Rivera
17	5201 Wylie St	A.E. Dixon Ford
18	5201 Wylie St	Charity Baptist Church
19	2809 Erastus St	Charity Baptist Church
20	5201 Liberty Rd	Charity Baptist Church
21	5201 Liberty Rd	Charity Baptist Church
22	2809 Erastus St	Charity Baptist Church C/O Rev F W Mcilveen
23	5301 Liberty Rd	Geneva Henry, a/k/a Geneva Crump
24	5311 Liberty Rd	Elmer Preston Trust
25	3300 E Lockwood Dr	Eliuth Jimenez Damian - et al.
26	3300 E Lockwood Dr	Eliuth Jimenez Damian - et al.
28	5118 Lelia St	Greater True Vine Baptist Church
29	2913 Fontinot St	The heirs and devisees of Perez Paul M
30	0 Lelia St	Greater True Vine Missionary Baptist Church
31	5111 Wylie St	Aquilina Perez
32	5107 Wylie St	Reginald & Leticia Tolbert
33	5105 Wylie St	Maryland Potts Estate
34	2901 Clementine St	Mary Bass Ross
35	5011 Wylie St	J.C. Carr and Carrie Mae Carr
36	5007 Wylie St	Andrew Jerry & Rebecca Johnson
37	5005 Wylie St	Monico Duque & Martha Zuiga Banda
38	2926 Lavender St	Clark Investment Co
39	2924 Lavender St	Clark Investment Co
40	2922 Lavender St	Greater MT. Nebo Baptist Church
41	5202 Lelia St	Greater True Vine Mbc
42	2806 Erastus St	Margaret Roberts, Etal
43	5304 Wylie St	Irene Perez Juarez
44	5304-1/2 Wylie St	Saturnino Delgado and Susie I Delgado
45	3013 Fontinot St	Lenora Young and Clifton Scott
46	705 Lucille	Joyce Marie Taylor
47	3009 Erastus St	Mary Elizabeth Crowley
48	5212 Lucille St	Jose F & Yolanda Ruiz
49	5210 Lucille St	Alfred B & Freddie Randolph
50	0 Lelia St	Percy Vital
51	3005 Erastus St	Jose Raymundo Govea
57	5008 Lelia St	Emitt Holmes
58	5010 Lelia St	Dickson Investment Company
59	5014 Leila	Guadalupe Rivera Jr. & Flor Estela Rivera
60	2421 Clementine	Rogelio Ruiz & Olivia Pineda
61	0 Lelia St	Guadalupe Rivera
62	2920 Clementine St	Amidee Capital Group, LLC
63	5116 Lelia St	Elizabeth Thomas
64	5112 Lelia St	Estate of Francis Potts
65	0 Lelia St	Mallie Pittman & Belinda Pittman
66	5211 Wylie	Sterling Trust for benefit of Charles Mock
67	0 Wylie	Sterling Trust for benefit of Charles Mock
68	0 Lelia St	Leroy Mock
69	2925 Erastus St	Leroy Mock
71	2942 Lavender St	Sandra Rena Thompson
76	2938 Lavender St	Essie Lee Hutchins
77	2934 Lavender St	Clark Investment Co
78	Lelia St	Frank Lippow
79	5009 Lelia St	Clara Christinar Humphrey
80	5007 Lelia St	Johnnie M York
81	0 Lelia St	Herbert Hall
82	5015 Lelia St	Manuel Castillo
83	3010 Fontinot	Greater True Vine Baptist Church
84	3011 Fontinot	Greater True Vine Baptist Church



Map ID	Parcel Address	Parcel Owner
85	5006 Lucille St	Eine Barrientos
86	5008 Lucille St	Norton Memorial Temple Cogic
87	0 Lucille St	Norton Memorial Temple Cogic
88	5014 Lucille St	Catherine Hall Lawrence
89	5016 Lucille St	On Time LP
90	0 Lucille St	Fajer Properties LLC
91	5015 Lucille St	Norton Memorial Temple Cogic
92	5017 Lucille St	Norton Memorial Temple Cogic
93	5019 Lucille St	Herbert L Stewart
94	5023 Lucille St	Leticia Serna, Jose A Martinez
95	3101 Fontinot St	Frank Lee & Alean D Dorn
96	5120 Jewel St	Arditha Morris Woods
97	3120 Fontinot St	Estate of Lee Thelma Lowe
98	5203 Lucille St # 10	Thomas & Gay Blodgett
100	3300 E Lockwood Dr	Robert Damian

EXPLANATION

- UPRR Property Boundary
- Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ and C-TZ)
- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

- Restrictive Covenant signed & received

Restrictive Covenants not received/Reasons Why IC Not Received

- Cannot Locate Property Owner
- Cause for Delinquent Taxes/In Tax Court
- Heirship Issues/Multiple Heirs
- Church Property/Board will not Authorize Signature for IC
- * Trustee in Communication with Beneficiaries

N

Scale in Feet

0 100 200

Source:
Aerial photo from Harris-Galveston Area Council (HGAC), flown Jan-Feb 2012, and property information from Harris County Appraisal District (HCAD), 2014.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Appendix 5 - Figure 1

PROPOSED OFF-SITE PROPERTIES FOR RESTRICTIVE COVENANTS

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: DEC., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

MAP ID - 3

HCAD ID - 0141440000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Wylie St, Houston,TX 77026 (Map ID 3, HCAD ID 0141440000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[5]				Property Ownership		Anticipated Filing Date[6]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[5] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[6] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 1, In block 6 of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Vol.1 page 55 of the Map Records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater Mount Nebo Baptist Church (Owner) with an address of 3819 Harland Dr., Houston, Texas77092. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater Mount Nebo Baptist Church
By: _____
Name: Charles L. Allen, Jr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Charles L. Allen, Jr., Pastor, of Greater Mount Nebo Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

Greater Mount Nebo Missionary Baptist Church

Rev. Charles L. Allen, Jr., Pastor

February 11, 2015

To Whom It May Concern:

This letter is to inform you that Charles L. Allen, Jr., is an authorized signer of the Greater Mount Nebo Missionary Baptist Church. He is authorized to represent the church in any and all legal and financial matters.

Thanks in advance for your cooperation in this matter.

Eldridge L Wright Jr
Treasurer

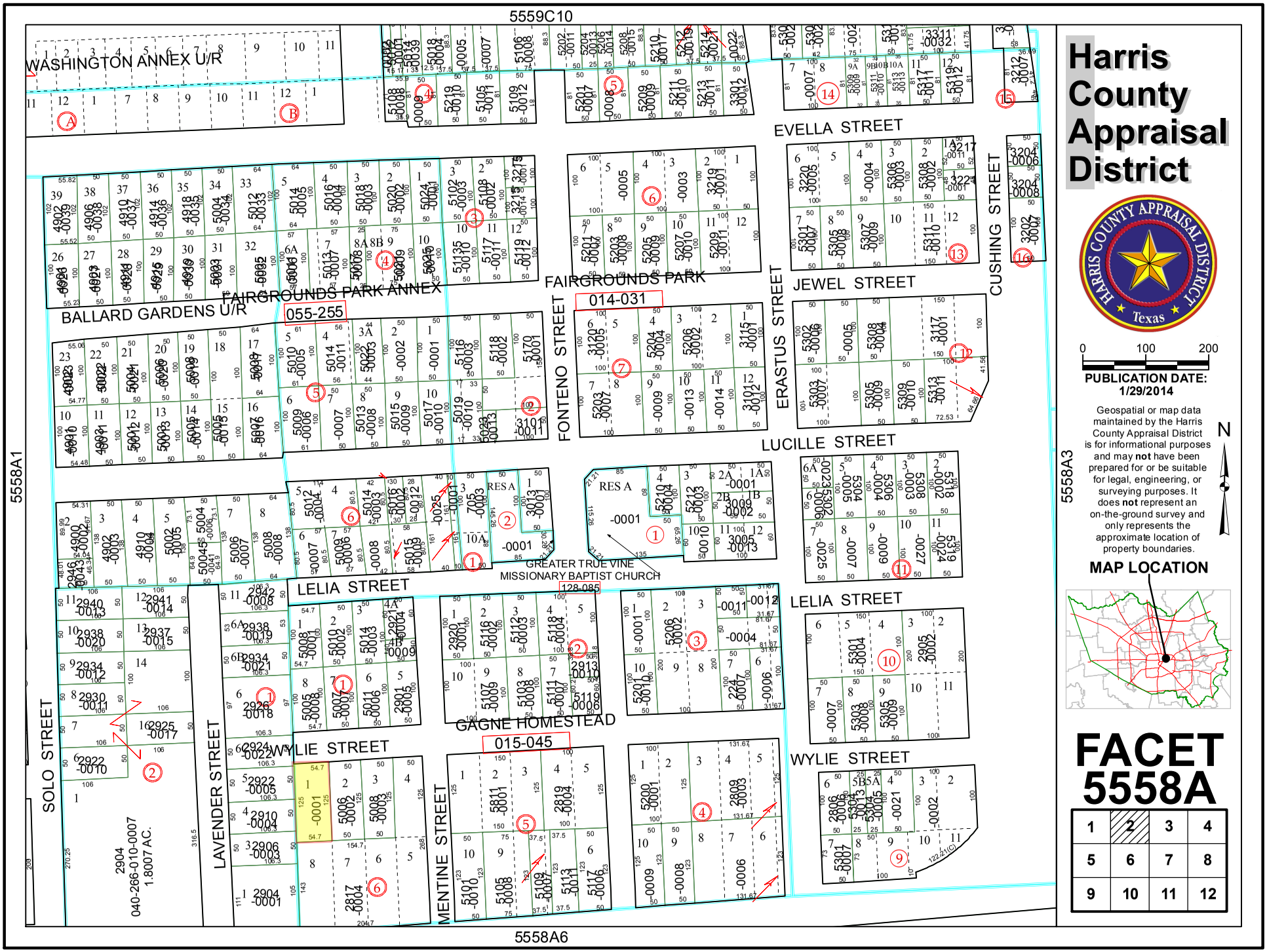
Brenda Branch
Secretary

5005 Liberty Road * P.O. Box 21522 * Houston, TX 77226-1522
Church: 713-676-910 * Office: 713-675-0344 * Fax: 713-671-2680

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0204
Date: January 12, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Greater Mount Nebo Baptist Church (by Deed filed for record under Harris County Clerk's File No. 20080307645)

Property Description: (Map ID# 3) (Tax ID# 014-144-000-0001)

Lot One (1), in Block Six (6), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

20080307645
06/13/2008 RP1 $20.00

Deed under Re-sale Pursuant to Texas Tax Code §34.05

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER

(Language pursuant Section 11.008 of the Texas Property Code)

Date of Execution:	February 6, 2007
Grantor:	Harris County for itself and as Trustee for: AND CITY OF HOUSTON AND HOUSTON INDEPENDENT SCHOOL DISTRICT AND HOUSTON COMMUNITY COLLEGE SYSTEM AND CITY OF HOUSTON LIENS
Grantee(s):	Greater Mount Nebo Baptist Church
Grantee(s) Mailing Address:	5005 Liberty Rd, Houston, TX 77026-0000
Consideration/High Bid:	Three Thousand ($3,000.00) Dollars
Land and Premises:	LOT 1 IN BLOCK 6 OF FINN SUBDIVISION OF GAGNE HOME, A SUBDIVISION IN HARRIS COUNTY, TEXAS ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN VOLUME 1, PAGE 55 OF THE MAP RECORDS OF HARRIS COUNTY, TEXAS.
HCAD Number:	0141440000001
Constable:	Constable Jack F. Abercia Precinct 1, Harris County, Texas
Newspaper:	Daily Court Review
Date of Re-Sale:	February 6, 2007
Order of Re-Sale:	That resolution, order or ordinance dated July 24, 2001 and passed and adopted by Grantor's governing body at a regularly scheduled meeting and further authorizing the re-sale of the real property described herein, previously acquired by Grantor in the following described tax foreclosure proceeding:
Cause:	**That case bearing Suit No. 2004-73015 filed in the 80th Judicial District of Harris County, Texas and styled HARRIS COUNTY, ET AL VS. JAMES CASH, ET AL.**

Date of Original Tax Foreclosure Sale: **September 5, 2006**

File Number of Original Tax Deed: **20060179352**

That WHEREAS, Grantor's governing body requested by **Order of Re-Sale** that the **Constable** advertise for sale and sell said land and premises herein described, by having a notice of the sale published in the English language once a week for three consecutive weeks preceding the day of the sale, in the above-described **Newspaper**, a newspaper published in Harris County, Texas, and the first publication appearing not less than twenty-one days immediately preceding the day of the Re-Sale, containing a statement of the authority by virtue of which the re-sale is to be made, the time of levy, time and place of sale; also a brief description of the property to be sold by stating the number of acres and the original survey; if the property was located in a platted subdivision or addition the name by which the land is generally known with reference to that subdivision or addition; or by adopting the description of the land as contained in the judgment.

And WHEREAS, on the above-stated **Date of Re-Sale**, being the first Tuesday of the month, between the hours of ten o'clock a.m. and four o'clock p.m., I sold the above-described land and premises at public venue in the County of Harris, State of Texas, at such place as approved by Commissioner's Court and the premises hereinafter described were sold to **Grantee** for the above-stated

Consideration, said **Grantee** being the highest bidder.

And WHEREAS, as required by Section 34.015, Texas Tax Code, Grantee(s) exhibited to me an unexpired written statement issued to Grantee(s) showing that the Harris County Tax Assessor-Collector determined that: (1) there are no delinquent ad valorem taxes owed by Grantee(s) to Harris County, and (2) for each school district or municipality having territory in Harris County, there are no known or reported delinquent ad valorem taxes owed by Grantee(s) to that school district or municipality.

NOW THEREFORE, in consideration of the premises aforesaid, and of the payment of the above-stated **Consideration**, the receipt of which is hereby acknowledged, I, as said **Constable**, have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said **Grantee** all of the estate, the right, title, and interest acquired or held by each taxing unit that was a party to the judgment foreclosing tax liens on the property which the **Grantor**, for itself, and as trustee for all taxing entities which established tax liens in the above referenced **Suit** had in and to the above-described land and premises;

To have and to hold the above described land and premises, together with all and singular the rights, privileges, and appurtenances thereto in any manner belonging unto the said **Grantee**, its successors, assigns forever, as fully and as absolutely as **I, Constable**, can convey by virtue of said **Order of Re-Sale**.

This conveyance is subject to any right of redemption remaining to the former owner at the time of the re-sale.

IN TESTIMONY WHEREOF, I have hereunto set my hand, this 21st day of May, 20 08.

Jack F. Abercia

Constable Jack F. Abercia Precinct 1,
Harris County, Texas

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

BEFORE ME, the undersigned Notary Public in and for the State of Texas, on this day personally appeared Constable Jack F. Abercia Precinct 1, Harris County, Texas, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same as Constable Jack F. Abercia Precinct 1, Harris County, Texas, for the purposes and consideration, and in the capacity therein expressed.

GIVEN under my hand and seal of office, this 21st day of May, 20 08.

CECILY ELDRIDGE
Notary Public
STATE OF TEXAS
Commission Exp. 02-25-2012

NOTARY PUBLIC, State of Texas

Return to:

LINEBARGER GOGGAN BLAIR
& SAMPSON, LLP
1301 TRAVIS, SUITE 300 (77002)
P O BOX 3064
HOUSTON, TX 77253-3064

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.
THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in the number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas on

JUN 13 2008

COUNTY CLERK
HARRIS COUNTY, TEXAS

Deed under order of Sale **Suit No. 2004-73015**

FILED FOR RECORD
8:00 AM

JUN 13 2008

County Clerk, Harris County, Texas

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 4

HCAD ID - 0141440000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5006 Wylie St, Houston,TX 77026 (Map ID 4, HCAD ID 0141440000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[7]				Property Ownership		Anticipated Filing Date[8]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[7] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[8] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 2, In block 6 of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Vol.1 page 55 of the Map Records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater Mount Nebo Baptist Church (Owner) with an address of 3819 Harland Dr., Houston, Texas77092. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater Mount Nebo Baptist Church
By: _____
Name: Charles L. Allen, Jr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Charles L. Allen, Jr., Pastor, of Greater Mount Nebo Baptist Church , known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

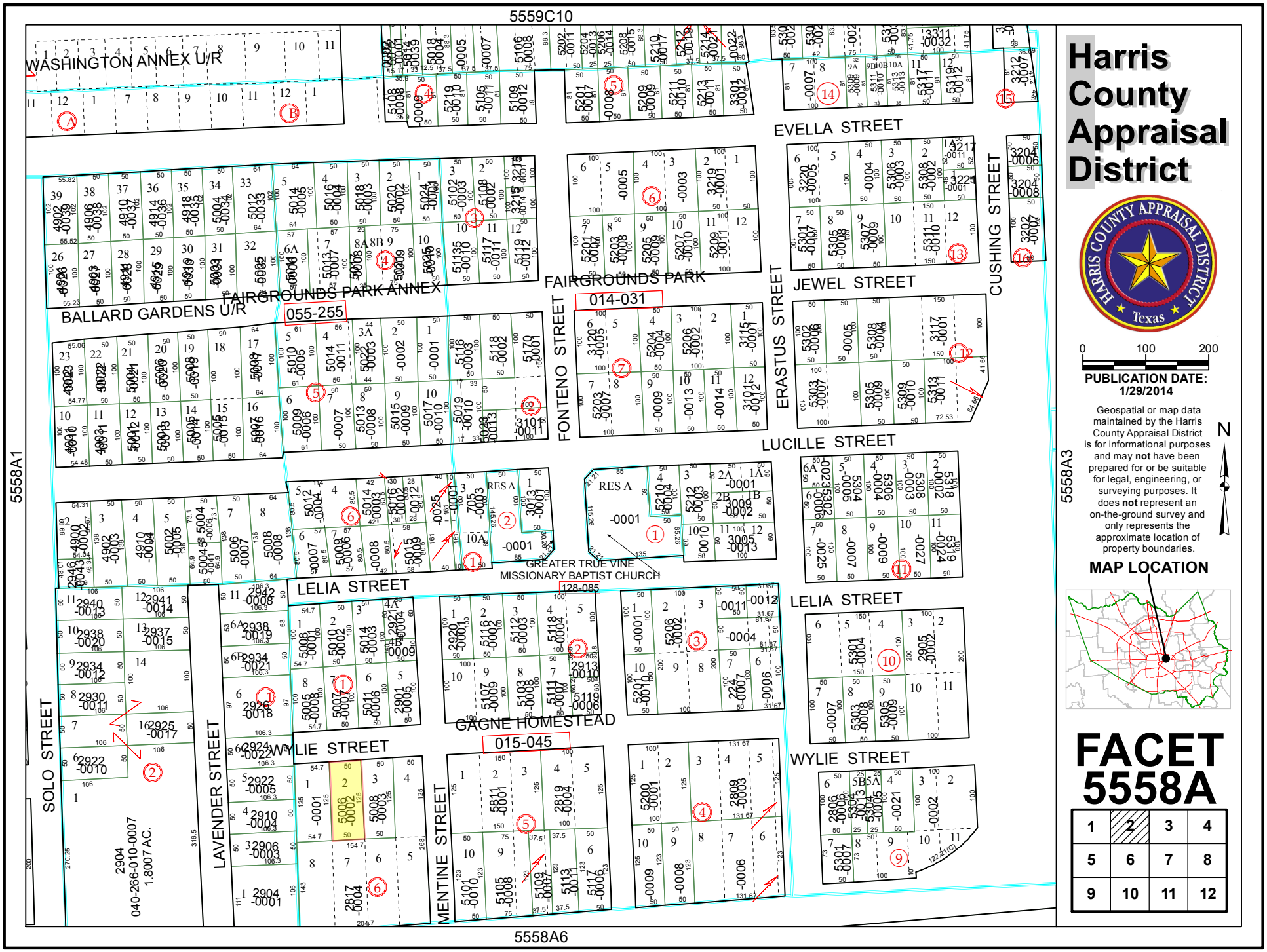
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0205
Date: January 12, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Greater Mount Nebo Baptist Church (by Deed filed for record under Harris County Clerk's File No. Y346977)

Property Description: (Map ID# 4) (Tax ID# 014-144-000-0002)

Lot Two (2), in Block Six (6), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Notice of Public Hearing filed October 26, 2004, under Harris County Clerk's File No. Y016929, pursuant of said notice an "Order of the Hearing Official of the Planning and Development Department of the City of Houston, Texas" dated November 1, 2004 and filed for record Harris County Clerk's File No.Y037121, it was determined that subject property be posted as a dangerous building and must be either repaired or demolished.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

HOLD FOR TEXAS AMERICAN TITLE COMPANY

GENERAL CASH WARRANTY DEED

Y346977
03/24/05 200806264 $16.00

Texas Property Code Section 11.008.
CONFIDENTIAL INFORMATION IN REAL PROPERTY RECORDS

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

Date: 3/23, 2005

Grantor: HANNAH LOUISE LOVEJOY, a single person

Grantor's Mailing Address (including county):

HANNAH LOUISE LOVEJOY
721 Herkimer St
Houston Tx 77007
Harris County

FILED
05 MAR 24 PM 2:17
COUNTY CLERK
HARRIS COUNTY, TEXAS

Grantee: GREATER MOUNT NEBO BAPTIST CHURCH

Grantee's Mailing Address (including county):

GREATER MOUNT NEBO BAPTIST CHURCH
2602 Caplin St
Houston Tx 77026
Harris County

Consideration: TEN AND NO/100 DOLLARS and other good and valuable consideration.

Property (including any improvements):

LOT TWO (2), IN BLOCK SIX (6) OF FINN SUBDIVISION OUT OF THE GAGNE HOMESTEAD ADDITION, A SUBDIVISION IN HARRIS COUNTY, TEXAS, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN VOLUME 89, PAGE 240 OF THE DEED RECORDS OF HARRIS COUNTY, TEXAS.

Reservations From and Exceptions to Conveyance and Warranty:

This conveyance is made and accepted subject to any and all existing restrictions, mineral reservations and interests, conditions, covenants, easements and rights of way, if any, applicable to and enforceable against the above described real property as now reflected by the records of the County Clerk of Harris County, Texas.

Current ad valorem taxes on the above described property as of the date hereof are assumed by grantee and grantee covenants and promises to pay the same.

650051149

Grantor, for the consideration, receipt of which is acknowledged, and subject to the reservations from and exceptions to conveyance and warranty, grants, sells and conveys to Grantee the property, together with all and singular the rights and appurtenances thereto in any wise belonging, to have and hold it to Grantee, Grantee's heirs, executors, administrators, successors or assigns forever. Grantor binds Grantor and Grantor's heirs, executors, administrators and successors to warrant and forever defend all and singular the property to Grantee and Grantee's heirs, executors, administrators, successors and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the reservations from and exceptions to conveyance and warranty.

When the context requires, singular nouns and pronouns include the plural.

Hannah Louise Lovejoy
HANNAH LOUISE LOVEJOY

ACKNOWLEDGMENT

STATE OF Texas §
COUNTY OF Harris §

This instrument was acknowledged before me on March 23, 2005, by HANNAH LOUISE LOVEJOY.

JEANETTE SCHNEIDER
NOTARY PUBLIC
STATE OF TEXAS
My Commission Expires
AUGUST 26, 2006

Jeanette Schneider
Notary Public, State of _____

PREPARED IN THE OFFICE OF:

STEPHEN BEST
WILLIAMS, BIRNBERG & ANDERSEN, LLP
2000 Bering Drive, Suite 909
Houston, Texas 77057

AFTER RECORDING RETURN TO:

F:\WP\MHL\TATCO\650\05-1149 CWD

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW
THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in file number Sequence on the date and at the time stamped hereon by me, and was duly RECORDED. In the Official Public Records of Real Property of Harris County Texas on

MAR 24 2005

COUNTY CLERK
HARRIS COUNTY, TEXAS

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 5

HCAD ID - 0141440000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5010 Wylie, Houston,TX 77026 (Map ID 5, HCAD ID 0141440000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[9]				Property Ownership		Anticipated Filing Date[10]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[9] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[10] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

LotThree (3) in Block (6) six, of Finn Subdivision out of the Gagne Homestead a Subdivision, a subdivision In Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Alberta Smith (Owner) with an address of 5010 Wylie, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24th day of March, 2015.

By: Alberta Smith
Alberta Smith

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Alberta Smith, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

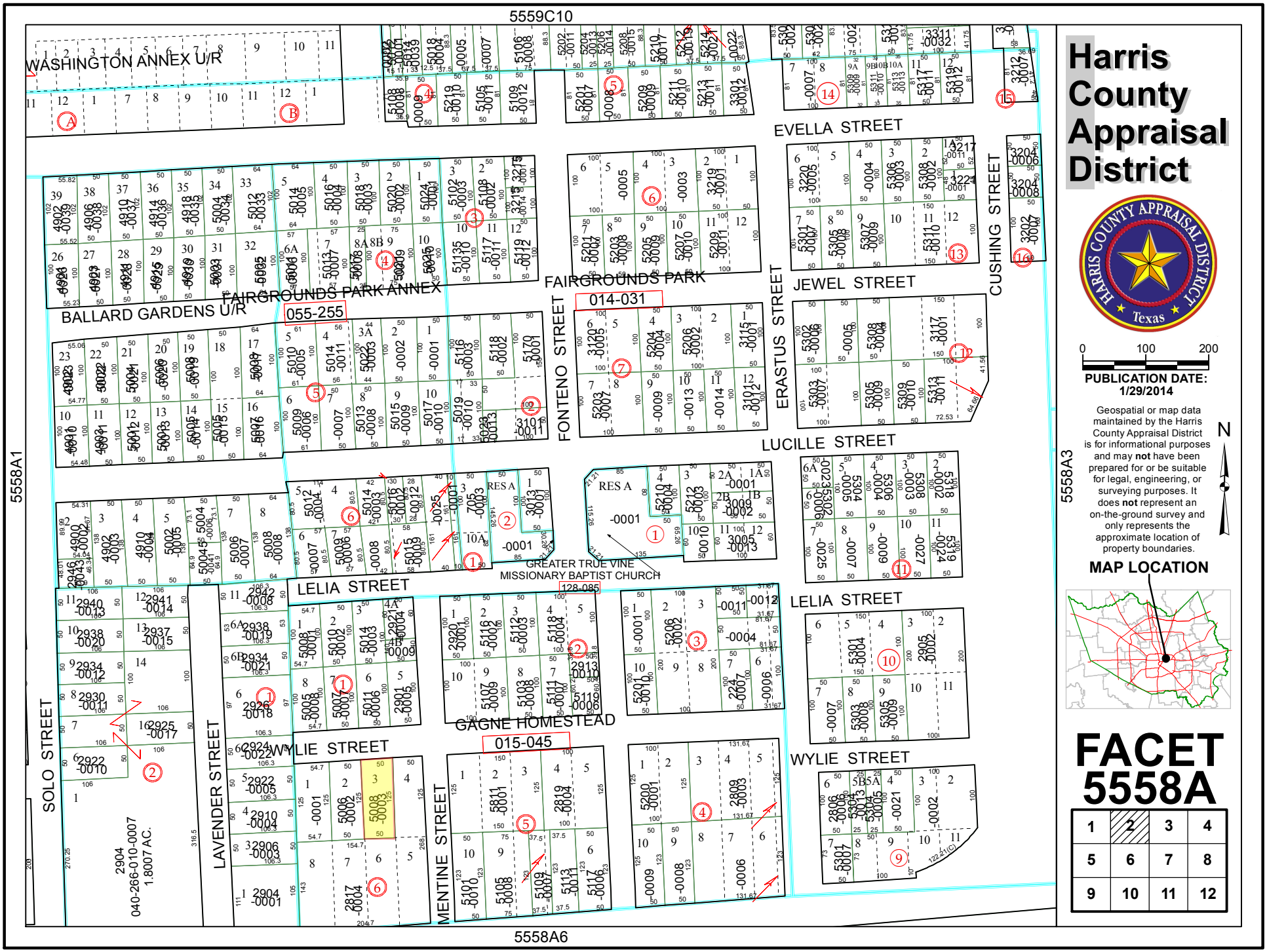
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0206
Date: January 12, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Alberta Smith (by Deed filed for record under Harris County Clerk's File No. U845008)

Property Description: (Map ID# 5) (Tax ID# 014-144-000-0003)

Lot Three (3), in Block Six (6), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

2) Deed of Trust dated June 16, 1980, filed for record on September 4, 1980, under County Clerk's File No. G664135, in the office of the County Clerk of Harris County, Texas, executed by Alberta Smith, in favor of John Burns, as Trustee, securing the obligations as set out in that certain promissory note of even date therewith in the principal amount of $10,000.00, payable to the order of John Burns, and subject to all terms, conditions and stipulations contained therein; including any additional indebtedness secured thereby.

3) Deed of Trust dated May 3, 2011, filed for record on May 19, 2011, under County Clerk's File No. 20110204413, in the office of the County Clerk of Harris County, Texas, executed by Alberta Smith, in favor of ABC Bonding Company, as Trustee, securing the obligations as set out in that certain promissory note of even date therewith in the principal amount of $40,000.00, payable to the order of ABC Bonding Company, and subject to all terms, conditions and stipulations contained therein; including any additional indebtedness secured thereby.

Involuntary Liens:

1) Abstract of Judgment filed December 5, 2007, under Harris County Clerk's File No. 20070713375, styled K. D. Upadhyaya, vs. Alberta Smith, in the principal amount of $2,690.00, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 6

HCAD ID - 0402660100003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2906 Lavender St, Houston,TX 77026 (Map ID 6, HCAD ID 0402660100003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[11]				Property Ownership		Anticipated Filing Date[12]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[11] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[12] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 3, In block 1 (one), of Liberty Road Estates, an unrecorded subdivision of a 5-1/40th acre tract out of Lot 8, Second Tier from Buffalo Bayou out of the Harris and Wilson Two League Grant in Harris County, Texas and being the same land conveyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by Deed Dated September 14, 1894, recorded in Vol. 79 Page 242 of the Deed Records of Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Jesse Beal and wife, Eloise Beal. (Owner) with an address of 2906 Lavender Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 26th day of February, 2015.

By: _____
Name: Barbara Beal via POA

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Barbara Beal, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 26th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

My Commission Expires: 12-11-18

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

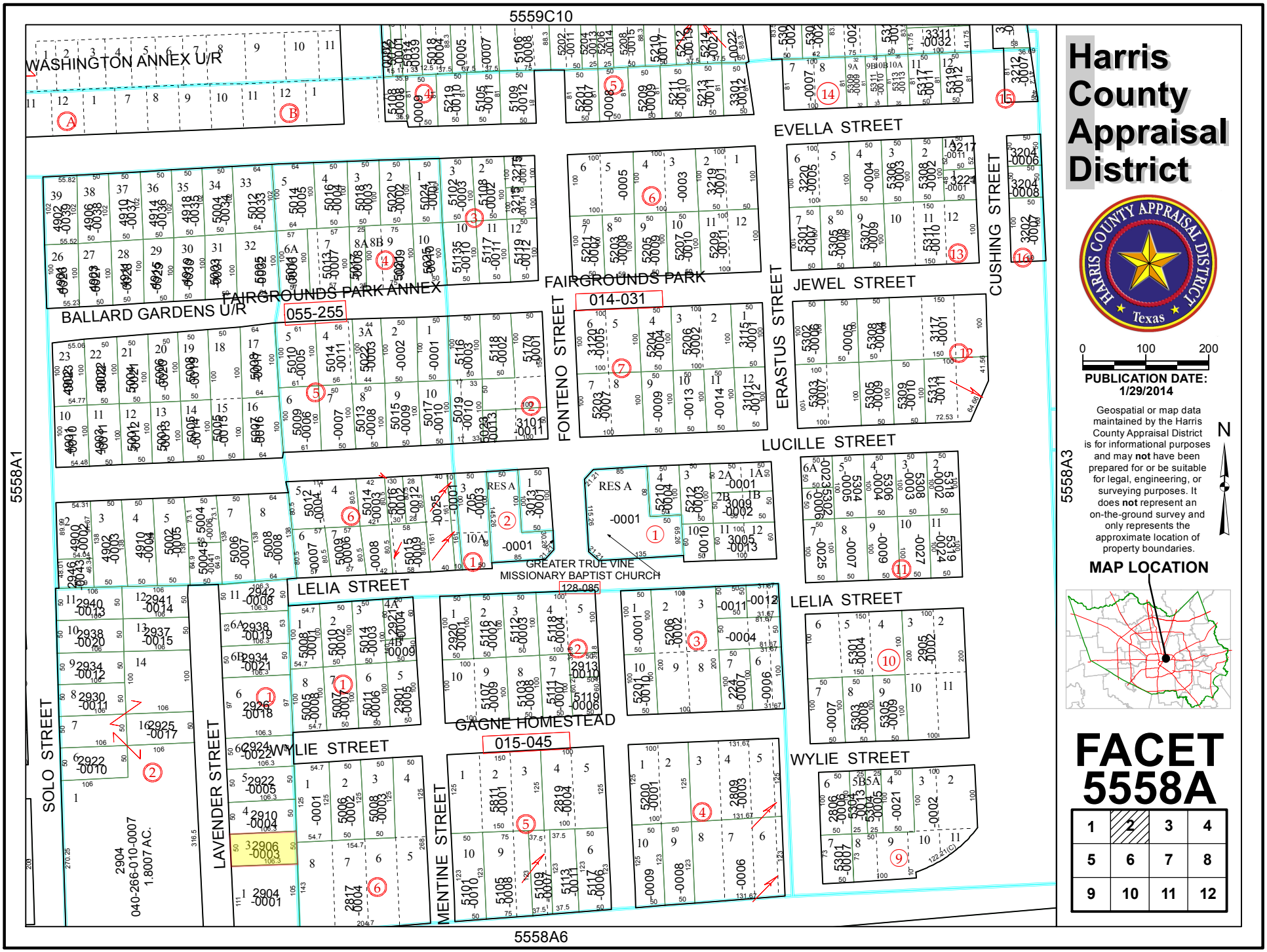
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
EVELLA STREET
CUSHING STREET
FONTENO STREET
ERASTUS STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
SOLO STREET
LAVENDER STREET
MENTINE STREET
055-255
014-031
128-085
015-045
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE: 1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET 5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-8479
Date: November 15, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of November, 2012, we find the following:

Title Vested In:

Jessie Beal and wife, Eloise Beal (by Warranty Deed filed for record under Volume 2344, Page 164 of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 6) (Tax ID# 040-266-010-0003)

Lot Three (3), in Block One (1), of Liberty Road Estates, an unrecorded subdivision of a 5-1/40th acre tract out of Lot 8, Second Tier from Buffalo Bayou out of the Harris and Wilson Two League Grant in Harris County, Texas and being the same land conveyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by Deed Dated September 14, 1894, recorded in Vol. 79 Page 242 of the Deed Records of Harris County, Texas, and said Lot 3, Block 1, Liberty Road Estates being more particularly described by metes and bounds as follows:

BEGINNING at the North West corner of said 5-1/40th acre tract;

THENCE East 282 feet to a point in the North line of said 5-1/40th acre tract;

THENCE South 400 feet along the East line of Lavender Street for the North West corner tract to be conveyed;

THENCE East 106.3 feet along a line parallel to the North line of said and 5-1/40th acre tract for North East corner;

THENCE South 50 feet along the East line of said 5 and 5-1/40th acre tract for South East corner;

THENCE West 106.3 feet along a line parallel to the North line of 5-1/40th acre tract for South West corner;

THENCE North 50 feet along the East line of Lavender Street for North West corner and place of beginning.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

Those as set forth by instrument(s) filed for record under Volume 2344, Page 164 of the Deed Records of Harris County, Texas.

Exceptions:

a) Building set-back line twenty (20) feet in width along the front property line(s), as set forth by instrument(s) recorded in Volume 2344, Page 164 of the Deed Records of Harris County, Texas.

b) Building set-back line three (3) feet in width along the side property line(s), as set forth by instrument(s) recorded in Volume 2344, Page 164 of the Deed Records of Harris County, Texas.

c) Utility easement five (5) feet in width along the rear property line(s) as set forth and defined by instrument(s) recorded in Volume 2344, Page 164 of the Deed Records of Harris County, Texas.

d) Sidewalk easement six (6) feet in width along the front property lines(s) as set forth and defined by instrument(s) recorded in Volume 2344, Page 164 of the Deed Records of Harris County, Texas.

e) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lavender Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

FC29142

LIEN

JAN 31-77 696758 et 029142 LST A PD 3.50

157-20-1662

FILED
JAN 31 9 56 AM 1977
COUNTY CLERK
HARRIS COUNTY, TEXAS

NOTICE OF LIEN

By direction of the City Council of the City of Houston (in Harris County, Texas) notice is hereby given that such City Council, being the governing body of said City, did by ordinance passed and approved January 12, 1977, determine that it is necessary that the hereinafter designated portions of Lavender, Clementine and various other streets in the City of Houston, Texas, known as topping Project No. 303

be improved, and did order that the same be improved in accordance with certain plans and specifications in such ordinance referred to, and did order that a portion of the cost of such improvement be specially assessed as a lien upon property abutting upon said portion of said streets, all as provided by Article 1105-b, Revised Civil Statutes; and notice is hereby given as required by Article 1220-a, Revised Civil Statutes; that a portion of the cost of such improvement is to be and will be specially assessed as a lien upon property abutting thereon.

The respective portion of the street as contained in the attached lists arereferred to as Topping Project No. 303.

Done and signed by me, the City Secretary of said City in its name, this 12th day of January,1977, by direction of its City Council given and contained in the ordinance aforesaid.

City Of Houston

By Anna Russell
City Secretary of the City of Houston

PLEASE RETURN TO:
ANNA RUSSELL, CITY SECRETARY
RM. 203, CITY HALL
P. O. BOX 1562
HOUSTON, TEXAS 77001

157-20-1663

STREET LIST

CONSTRUCTION OF PAVING, LAVENDER, CLEMENTINE, FONTINOT, WYLIE AND LELIA STREETS, KNOWN AS TOPPING PROJECT NO. 303, C.D. 1

GROUP I

Streets to be improved with *Semi-Rigid Base, 1½" Type "D" Hot Mix Asphaltic Concrete Surfacing, Concrete Curb and Gutter and Concrete Sidewalks Both Sides

STREET NAME	ROADWAY WIDTH	BASE & SURF. WIDTH	FROM	TO
Lavender	35'	32'	N.P.L. Liberty Road	564.3' N. N.P.L. Liberty Road
Clementine	27'	24'	N.P.L. Liberty Road	16' S. S.P.L. Lucille
Fontinot	27'	24'	N.P.L. Liberty Road	17' S. S.P.L. Lucille
Fontinot	27'	24'	17.33' N. N.P.L. Jewel	15' S. S.P.L. Evella
Wylie	27'	24'	199.8' W. W.P.L. Clementine	18'W. W.P.L. Erastus
Wylie	27'	24'	10' E. E.P.L. Erastus	W.P.L. Cushing
Lelia	27'	24'	189.85' W. W.P.L. Clementine(As Measured along S.P.L. Lelia)	W.P.L. Cushing

*SEMI-RIGID BASE SHALL BE:

1. 7" Cement Stabilized Shell Base Course,
2. 7" Lime Stabilized Crushed Limestone Base Course,
3. 6" Hot Mix Asphaltic Concrete Base, and/or
4. 8" Lime Stabilized Pit-Run Gravel Base Course

157-20-1664

GROUP II

CONCRETE SIDEWALKS ONLY(Both Sides of Street)

STREET NAME	FROM	TO
Clementine	16' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	17' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	N.P.L. Jewel	17.33' N.N.P.L. Jewel
Fontinot	15' S.S.P.L. Evella	S.P.L. Evella
Wylie	18' W.W.P.L. Erastus	W.P.L. Erastus
Wylie	E.P.L. Erastus	10' E.E.P.L. Erastus

1164

WARRANTY DEED

929395

STATE OF TEXAS I

KNOW ALL MEN BY THESE PRESENTS

COUNTY OF HARRIS I

That the Clark Investment Company, a body corporate, duly incorporated and doing business under the laws of the State of Texas, in consideration of the sum of Ten Dollars ($10.00) and other good and valuable considerations to it paid by Jessie Beal and wife Eloise Beal, has Granted, Sold and Conveyed and by these presents does Grant, Sell and Convey unto the said Jessie Beal and wife Eloise Beal of the County of Harris, State of Texas, all that certain tract or parcel of land known as Lot No. 3, Block No. 1, Liberty Road Estates, an unrecorded subdivision of a 5 and 1/40th acre tract out of Lot Eight (8), Second Tier from Buffalo Bayou out of the Harris and Wilson Two League Grant in Harris County, Texas and being the same land conveyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by Deed dated September 14, 1994, recorded in Volume 79 Page 242 of the Deed Records of Harris County, Texas, and said Lot 3, Block 1; Liberty Road Estates being more particularly described by metes and bounds as follows:

Beginning at the North west corner of said 5 and 1/40th acre tract; THENCE East 232 feet to a point in the North line of said 5 and 1/40th acre tract; THENCE South 400 feet along the East line of Lavender Street for the North west corner of tract to be conveyed; THENCE East 106.3 feet along a line parallel to the North line of said 5 and 1/40th acre tract for North east corner; THENCE South 50 feet along the East line of said 5 and 1/40th acre tract for South east corner; THENCE West 106.3 feet along a line parallel to the North line of said 5 and 1/40th acre tract for South west corner; THENCE North 50 feet along the East line of Lavender Street for North west corner and place of beginning.

It is agreed by the Grantees, their heirs and assigns, that all residence, outhouses or buildings of any other description are to be set back 20 feet from the front property line, and at least 3 feet from the property line on each side. The Grantee agrees and the Grantor excepts from this deed the following easements:

An easement right of 5 feet across the back end of the property herein conveyed for the use and benefit of any and all utility companies serving this area, and an essement of 6 feet across the front of said property for sidewalk purposes.

To Have and To Hold the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging unto the said Jessie Beal and wife Eloise Beal, their heirs and assigns, forever, and the said Clark Investment Company does hereby bind itself, its successors and assigns to Warrant and Forever Defend all and singular the said premises unto the said Jessie Beal and wife Eloise Beal, their heirs and

assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

In witness whereof the Clark Investment Company, aforesaid has caused these presents to be signed by W. K. Chapman, its president, thereunto authorized by By-Laws of the said Clark Investment Company and its common seal to be hereunto affixed by James A. Clark, its secretary, this 28th day of September, 1951.

BY W. K. Chapman
President

Attest:

CLARK INVESTMENT CO.

James A. Clark
Secretary

ACKNOWLEDGMENT

STATE OF TEXAS |
COUNTY OF HARRIS |

BEFORE ME, the undersigned authority, a Notary Public, in and for said County and State on this day personally appeared W. K. Chapman, president of Clark Investment Company, known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said Clark Investment Company, a corporation and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS the 28th day of September, 1951.

Lucy J. Pilgrim
Notary Public in and for Harris County, Texas
LUCY J. PILGRIM

NOTARY PUBLIC COUNTY OF HARRIS, TEXAS

DOCUMENTARY

Title Data, Inc. TX TDI22851 HA D 2344/165.001

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 7A

HCAD ID - 0402660100001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2904 Lavender St, Houston,TX 77026 (Map ID 7, HCAD ID 0402660100001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[13]				Property Ownership		Anticipated Filing Date[14]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[13] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[14] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 1, in block 1 of Liberty Road Estates, an unrecorded subdivision out the Harris and Wilson Survey, Abstract No. 32, Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater Mount Nebo Baptist Church (Owner) with an address of 3819 Harland Dr., Houston, Texas77092. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater Mount Nebo Baptist Church
By: _____
Name: Charles L. Allen, Jr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Charles L. Allen, Jr., Pastor, of Greater Mount Nebo Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

PAUL A SH... My Commission ... December 11, 2018

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

... A SHANKLIN ... Expires ... 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

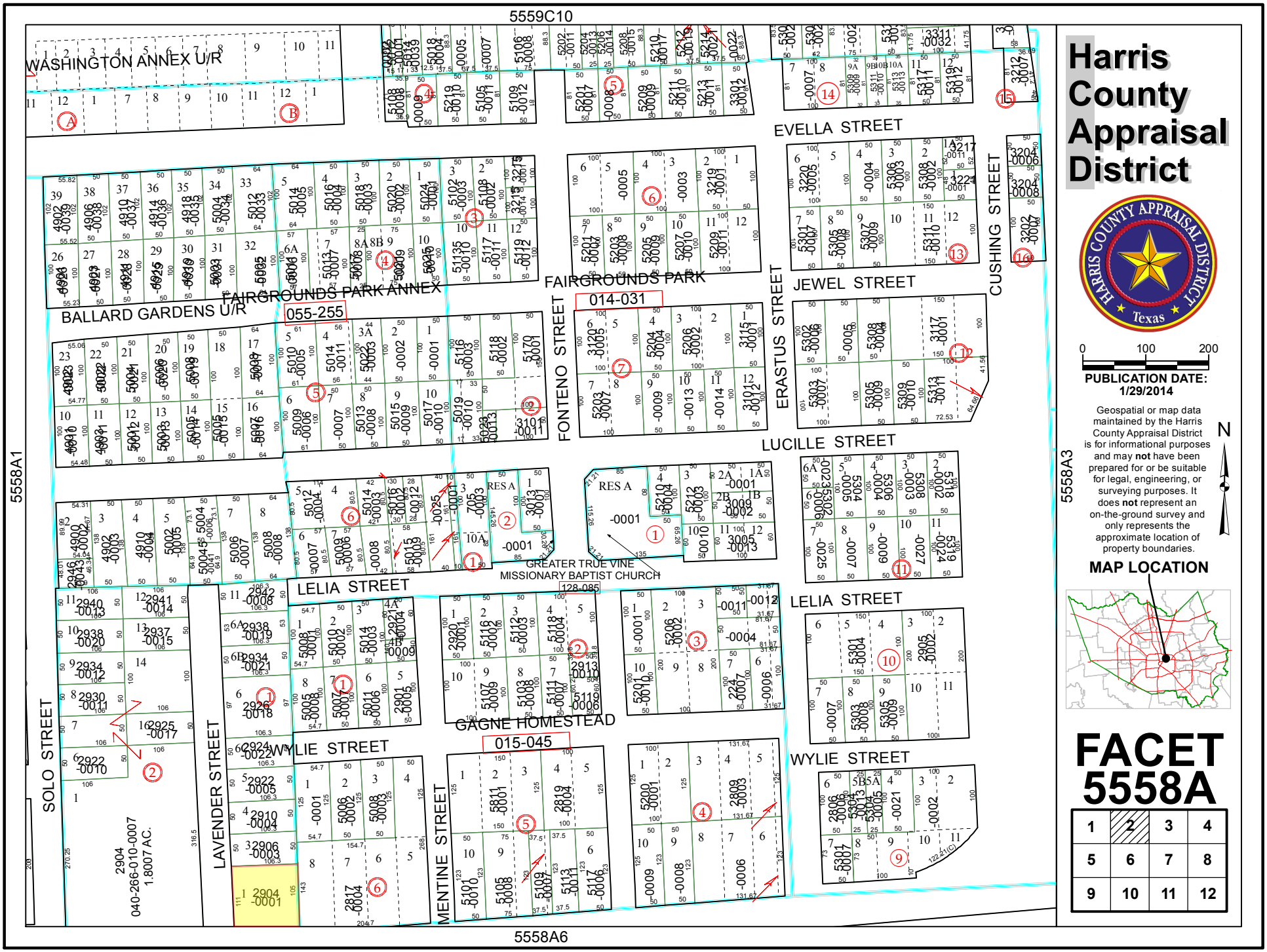
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
055-255
014-031
015-045
128-085
EVELLA STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
FONTENO STREET
ERASTUS STREET
CUSHING STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT Texas
0 100 200
PUBLICATION DATE: 1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET 5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-8487
Date: November 15, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of November, 2012, we find the following:

Title Vested In:

Clark Investment Company (by Warranty Deed filed for record under Volume 2015, Page 716 of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 7) (Tax ID# 040-266-010-0001)

Lots One (1) and Two (2), in Block One (1), of Liberty Road Estates, a, unrecorded subdivision out of the Harris and Wilson Survey, Abstract No. 32 in Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lavender Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

1) We find reference to Cause No. 2009-46348, in the District Court of Harris County, Texas, styled Harris County, etal vs. Clark Investment Company, etal. It is assumed that said cause of action is for delinquent taxes due on subject property. Said suit includes a Final Judgment dated February 23, 2011 and an Order of Sale in Tax Suits dated October 10, 2011.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

Filed 12 September 12 P4:05
Chris Daniel - District Clerk
Harris County
FAX15305422

SUIT NO. 2009-46349

HARRIS COUNTY, ET AL	§	IN THE DISTRICT COURT
	§	
VS.	§	190TH JUDICIAL DISTRICT
	§	
CLARK INVESTMENT COMPANY, ET AL	§	HARRIS COUNTY, TEXAS

AMENDED NOTICE OF TRIAL

You are hereby advised that the above referenced cause has been set for Trial at the following time, date and place:

DATE: **Wednesday, the 19th day of September, 2012 TIME: 1:30 p.m.**
PLACE: Tax Master Court
201 Caroline, 8th Floor
Houston, Texas 77002

Respectfully submitted,

LINEBARGER GOGGAN
BLAIR & SAMPSON, LLP
1300 MAIN, SUITE 300 (77002)
P.O. BOX 3064
HOUSTON, TX 77253-3064
(713) 844-3580, (713) 844-3504 – FAX

Victoria D. Vonder Haar
State Bar No. 24041980
Damon D. Edwards
State Bar No. 24027156
Attorney for Plaintiff(s)

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been sent to the following by certified mail, hand-delivery, or fax on the 12th, day of SEPTEMBER, 20 12

Michael Nassif
Attorney Ad Litem Attorney for Clark Investment Company,
Clark Investment Company, Its Unknown Shareholders, Successors and Assigns,
D & H Land Company and D.& H Land Company, Its Unknown Shareholders, Successors and Assigns
P.O. Box 18136
Sugar Land, TX 77496
Via Facsimile: (281) 710-7201
Via Email: mikenassif@comcast.net

Gilbert Hernandez
103 N. Jenkins
Houston, TX 77003-1440
Via Certified Mail, Return Receipt Requested

Attorney Certifying

cp

Title Data, Inc. TX TDI22851 HA 53333139.001 N

GENERAL WARRANTY DEED

STATE OF TEXAS) 232781
KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF HARRIS)

That we, W. K. CHAPMAN and CARL S. SMITH of the County of Harris, State of Texas, for and in consideration of the sum of Ten and No/100 Dollars ($10.00) and other good and valuable considerations, to us in hand paid by CLARK INVESTMENT COMPANY, a corporation of the County of Harris, State of Texas, receipt of which is hereby acknowledged and confessed; And Grantee herein assumes the payment of the balance due under the provisions of one certain promissory note for the sum of Thirteen Thousand Dollars ($13,000.00), dated June 11, 1947, payable to the order of Johanna Pancamo and Rose Pancamo, acting individually and as independent executrixes of the estates of Frank Pancamo, deceased, and Tony Pancamo, deceased, respectively, which note bears interest until maturity at the rate of six per cent (6%) per annum, payable monthly, all past due principal and interest, if any to bear interest at the rate of ten per cent (10%) per annum, containing the usual accelerating maturity and ten per cent (10%) attorney's fees clauses, said note being due and payable in installments as therein provided, said note being secured by a Deed of Trust dated June 11, 1947, executed by W.K. Chapman and Carl S. Smith to W. Noble Carl, Trustee, to which reference is here made;

have GRANTED, SOLD and CONVEYED, and by these presents do GRANT, SELL and CONVEY unto the said CLARK INVESTMENT COMPANY, the following described property, to-wit:

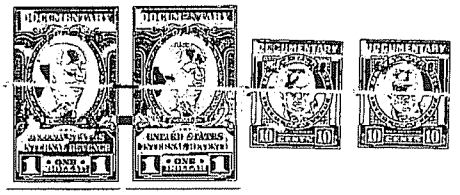
A tract of 5-1/40 acres out of the N.W. portion of the GAGNE TRACT, which is the middle portion of Lot Number Eight(8), Second Tier from Buffalo Bayou, out of the Harris-Wilson Two League Grant, in Harris County, Texas, and being the same land conveyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by Deed dated September 14, 1894, recorded in Volume 79, Page 242 of the Deed Records of Harris County, Texas; said tract of 5-1/40 acre tract subsequently subdivided and known as Liberty Road Estates, Block One (1) and Block Two (2);

With the exception of Lots No. Five(5), Six (6), Seven (7) and the South Forty (40) feet of Lot Eight (8), all in Block One (1), Liberty Road Estates; and Lots No. Eighteen (18), Nineteen (19) and the North Twelve (12) feet of Lot Twenty (20), all in Block Two (2) Liberty Road Estates, said Liberty Road Estates being a re-subdivision of the 5-1/40 acre tract above described.

THIS CONVEYANCE, is made subject to all and singular the restrictions, conditions and covenants, if any, applicable to and enforceable against the above described property.

TO HAVE AND TO HOLD the above described premises, together with all and singular, the rights and appurtenances thereto in anywise belonging unto the said CLARK INVESTMENT COMPANY, its successors and assigns forever. And we do hereby bind ourselves, our heirs, executors and administrators, to Warrant and Forever Defend, all and singular the said premises unto the said CLARK INVESTMENT COMPANY, its successors and assigns, against every person whomsoever, lawfully claiming or to claim the same or any part thereof.

WITNESS our hands this 16th day of December, 1949.



W. K. Chapman

Carl S. Smith

STATE OF TEXAS ⟩

COUNTY OF HARRIS ⟩

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared W. K. Chapman and Carl S. Smith, known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for thepurposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 16th day of December, A.D. 1949.

M. J. Gibson
Notary Public in and for Harris County, Texas

Filed for Record Dec. 16 1949, at 4:10 o'clock P.M.

Recorded Dec 29 1949, at 8:08 o'clock A.M.

W. D. MILLER, Clerk County Court, Harris County, Texas.

BY Magnette Jenkins Deputy

Title Data, Inc. TX TDI22851 HA D 2015/717.001

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 8

HCAD ID - 0141440000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **505 Liberty, Houston,TX 77026 (Map ID 8, HCAD ID 0141440000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[15]				Property Ownership		Anticipated Filing Date[16]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[15] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[16] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 4, 5, 6, 7, and 8 In block 6 of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Vol.1 page 55 of the Map Records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater Mount Nebo Baptist Church (Owner) with an address of 3819 Harland Dr., Houston, Texas77092. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater Mount Nebo Baptist Church
By: _____
Name: Charles L. Allen, Jr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Charles L. Allen, Jr., Pastor, of Greater Mount Nebo Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

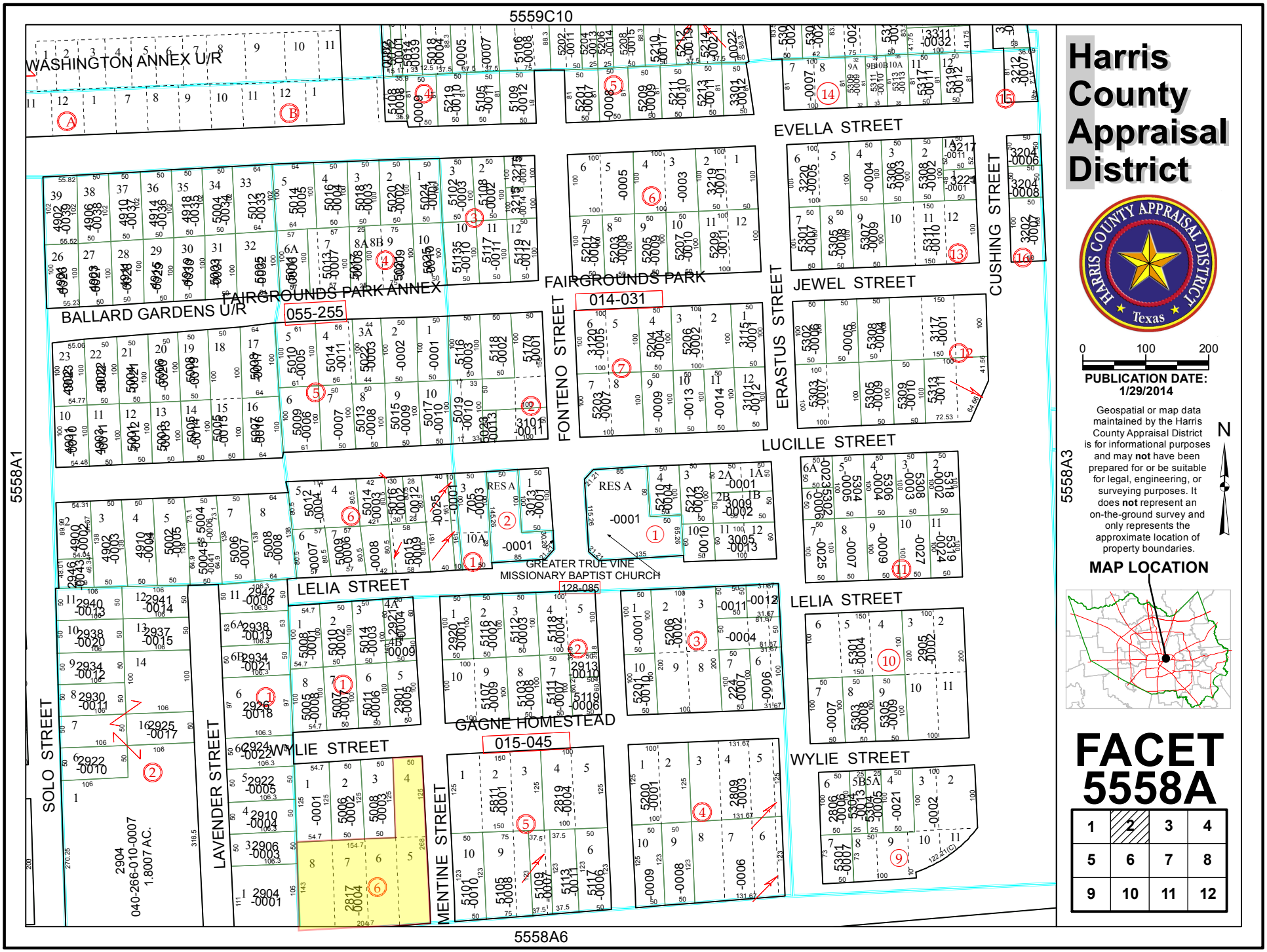
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

EXHIBIT 1

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0207
Date: January 12, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Greater Mount Nebo Baptist Church (by Deed filed for record under Harris County Clerk's File No. G189795)

Property Description: (Map ID# 8) (Tax ID# 014-144-000-004)

Lots Four (4), Five (5), Six (6), Seven (7) and Eight (8), in Block Six (6), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

EXHIBIT 1

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 1

YF 126311-HR

0189795

NOTICE

Prepared by the State Bar of Texas for use by Lawyers only. Reviewed 1-1-76
To select the proper form, fill in blank spaces, strike out form provisions or insert special terms constitutes the practice of law. No "standard form" can meet all requirements.

WARRANTY DEED WITH VENDOR'S LIEN

135-93-2188

THE STATE OF TEXAS }
COUNTY OF HARRIS } KNOW ALL MEN BY THESE PRESENTS

That WE, Elmo S. Candelari and wife, Frances Lucy Candelari

of the County of Harris and State of Texas for and in consideration of the sum of TEN AND NO/100 ($10.00) - - - - - - - - - - - - - - - DOLLARS

and other valuable consideration to the undersigned paid by the grantee herein named, the receipt of which is hereby acknowledged, and the further consideration of the execution and delivery of a promissory note of even date herewith in the sum of $24,000.00 payable to the order of Elmo S. Candelari and wife, Frances Lucy Candelari, bearing interest at 9-7/8ths percent per annum from date, executed by the hereinafter named Trustees of the Greater Mount Nebo Baptist Church and being due and payable in monthly installments of $256.08 each, including interest, the first of said monthly installments being due and payable on or before the 5th day of SEPTEMBER, 1979, and the remaining monthly installments being due and payable on or before the same day of each and every month thereafter until the full amount of principal and interest has been paid, and as such payments are made they shall be applied first to the payment of all accrued interest to date of payment, and the balance, if any, to be applied toward the reduction of principal; said note containing the usual acceleration of maturity, attorney's fees and past due interest clauses;

FILED
Aug 8 10 17 AM 1979
COUNTY CLERK
HARRIS COUNTY, TEXAS

RECORDER'S MEMORANDUM
ALL BLACKOUTS, ADDITIONS AND CHANGES WERE PRESENT AT THE TIME THE INSTRUMENT WAS FILED AND RECORDED.

the payment of which note is secured by the vendor's lien herein retained, and is additionally secured by a deed of trust of even date herewith to Louis A. Pontello, Jr., Trustee.

have GRANTED, SOLD AND CONVEYED, and by these presents do GRANT, SELL AND CONVEY unto Charles L. Allen, Melvin Curry, Willie Johnson, Nehemiah Cooper, John Williams, Willie Cooper, Sr., Joe Bolton, Bennie Johnson, Gidroz Alexander and Danny [redacted], all of the County of Harris and State of Texas [redacted] as TRUSTEES for the Greater Mount Nebo Baptist Church, an unincorporated [redacted] religious organization of Houston Harris County, Texas, all of the following described real property in Harris County, Texas, to-wit:

Lots Four (4), Five (5), Six (6), Seven (7) and Eight (8), in Block

135-93-2188

EXHIBIT 1

135-93-2189

Six (6), of FINN'S SUBDIVISION of Shares Two and Three of the Gagne Homestead, an addition in the City of Houston, Harris County, Texas, according to the Map thereof recorded in Volume 1, page 55, Map Records, Harris County, Texas, and being the same property conveyed from Eva Candelari, et al to Elmo S. Candelari and wife, Frances Lucy Candelari by deeds filed under Harris County Clerk's File Nos. C-763739 and C-763740.

This conveyance is made subject to, all and singular, the restrictions, conditions, easements, mineral and/or royalty reservations, and covenants, if any, applicable to and enforceable against the above described property as reflected by the records of the County Clerk of Harris County, Texas.

RECORDER'S MEMORANDUM
ALL BLACKOUTS, ADDITIONS AND CHANGES WERE PRESENT AT THE TIME THE INSTRUMENT WAS FILED AND RECORDED.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging unto the said grantees above named, or their successors and assigns forever; and we do hereby bind ourselves, our heirs, executors and administrators to WARRANT AND FOREVER DEFEND all and singular the said premises unto the said grantees above named, their successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

But it is expressly agreed that the VENDOR'S LIEN, as well as the Superior Title in and to the above described premises, is retained against the above described property, premises and improvements until the above described note and all interest thereon are fully paid according to the face, tenor, effect and reading thereof, when this Deed shall become absolute.

EXECUTED this 5th day of AUGUST A. D. 19 79.

Elmo S. Candelari

Frances Lucy Candelari

C192813

EXHIBIT 1

(Acknowledgment)

THE STATE OF TEXAS }
COUNTY OF }

135-93-2190

Before me, the undersigned authority, on this day personally appeared Elmo S. Candelari and Frances Lucy Candelari, husband and wife, both

known to me to be the person.s..... whose names...are... subscribed to the foregoing instrument, and acknowledged to me that.....t he.y.... executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office on this the 7th day of August, A.D. 19 79.

Horace Roberson
Notary Public in and for Harris County, Texas.
My commission expires ....., 19.....

(Printed or stamped name of notary)

HORACE ROBERSON
Notary Public in Harris County, Texas
My Commission Expires February 28, 1981

(Acknowledgment)

THE STATE OF TEXAS }
COUNTY OF }

Before me, the undersigned authority, on this day personally appeared

known to me to be the person..... whose name..... subscribed to the foregoing instrument, and acknowledged to me that..... he..... executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office on this the day of , A.D. 19

Notary Public in and for County, Texas.
My commission expires....., 19.....

(Printed or stamped name of notary)

(Acknowledgment)

THE STATE OF TEXAS }
COUNTY OF }

Before me, the undersigned authority, on this day personally appeared

known to me to be the person..... whose name..... subscribed to the foregoing instrument, and acknowledged to me that..... he..... executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office on this the day of , A.D. 19

Notary Public in and for County, Texas.
My commission expires....., 19.....

(Printed or stamped name of notary)

(Corporate Acknowledgment)

THE STATE OF TEXAS }
COUNTY OF }

Before me, the undersigned authority, on this day personally appeared

of

a corporation, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity therein stated and as the act and deed of said corporation.

132-43-5181

Given under my hand and seal of office on this the day of , A.D. 19

RETURN RECEIPT TO
CHICAGO TITLE
INSURANCE COMPANY
1500 AUSTIN AT BELL
HOUSTON, TEXAS 77002
Attn: Horace Roberson

Notary Public in and for County, Texas.
My commission expires ....., 19.....

(Printed or stamped name of notary)

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 9

HCAD ID - 0141400000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5119 Wylie St, Houston,TX 77026 (Map ID 9, HCAD ID 0141400000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[17]				Property Ownership		Anticipated Filing Date[18]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[17] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[18] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot six (6) in Bock (2) Of Finn Subdivision, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Martha Gilliam an address of 5119 Wylie, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER] Martha Gilliam
By: _____
Name: Martha Gilliam

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Martha Gilliam, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

N
xpires
2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

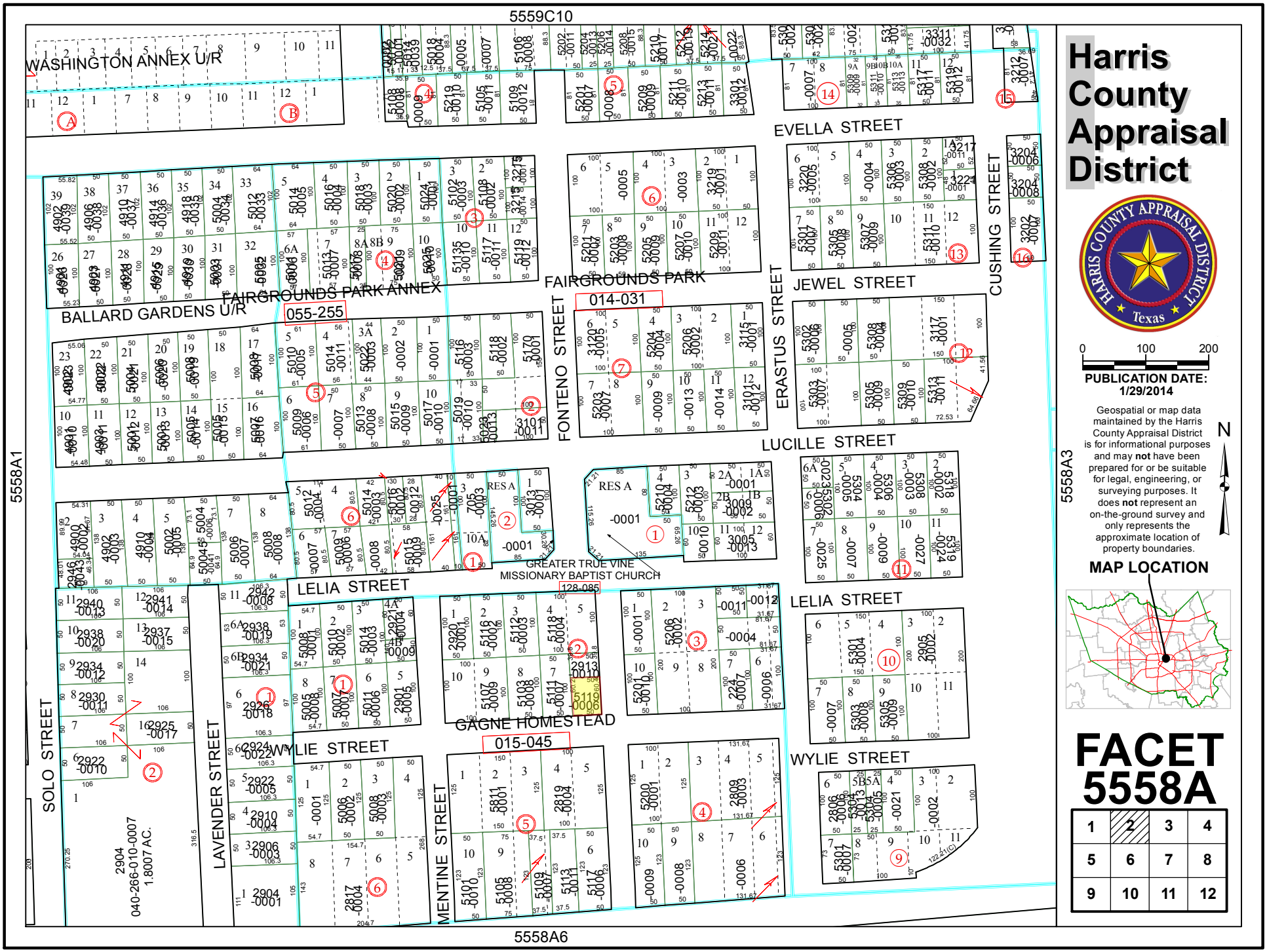
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9443
Date: December 21, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 16th day of December, 2012, we find the following:

Title Vested In:

Martha Gilliam (by Warranty Deed filed for record under Harris County Clerk's File Nos. E690955 being refiled under E855995 and by Muniment of Title under PW# 370718)

Property Description: (Map ID#9) (Tax ID# 014-140-000-0006)

A tract of land containing 3,010.00 square feet, more or less, out of Lot 6, Block 2 out of Finn Subdivision of Shares 2 and 3, a part of the Gagne Homestead, out of Harris and Wilson two league grant in Harris County Texas, said lot as recorded in Volume 1, Page 55 of the Harris County Map Records, Harris County, Texas, being more particularly described by metes and bounds as follows:

BEGINNING at a 1/2 inch iron rod found for the southwesterly corner of Lot 6 as described above and of the tract herein described, same point also being on the northerly right-of-way of Wylie Street (60-feet R.0.W.);

THENCE, with an internal angle of 90°00'00", a distance of 60.20 feet to a 1/2 inch iron rod set for the northwesterly corner of the tract herein described;

THENCE, with an internal angle of 90°00'00", a distance of 50.00 feet to a 1/2 inch iron rod set for the northeasterly corner of the tract herein described same point being on the westerly right-of-way of Fontinot Street (40-feet R.O.W.);

THENCE, with an internal angle of 90°00'00", a distance of 60.20 feet to a 1/2 inch iron rod set for the southeasterly corner of the tract herein described;

THENCE, with an internal angle of 90°00'00", a distance of 50.00 feet to the POINT OF BEGINNING and containing 3,010.00 square feet of land, more or less.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 10

HCAD ID - 0141430000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2820 Clementine St, Houston,TX 77026 (Map ID 10, HCAD ID 0141430000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[19]				Property Ownership		Anticipated Filing Date[20]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[19] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[20] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot one (1), Two (2) and Three (3) in Block Fivet (5), Of Finn Subdivision, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Beatrice Benson, as heir and devisee of the Estate of Tillie Potts Benson with an address of 1003 Saddle Rock, Texas 77088. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: Beatrice Benson
Name: Beatrice Benson,

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Beatrice Benson,, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

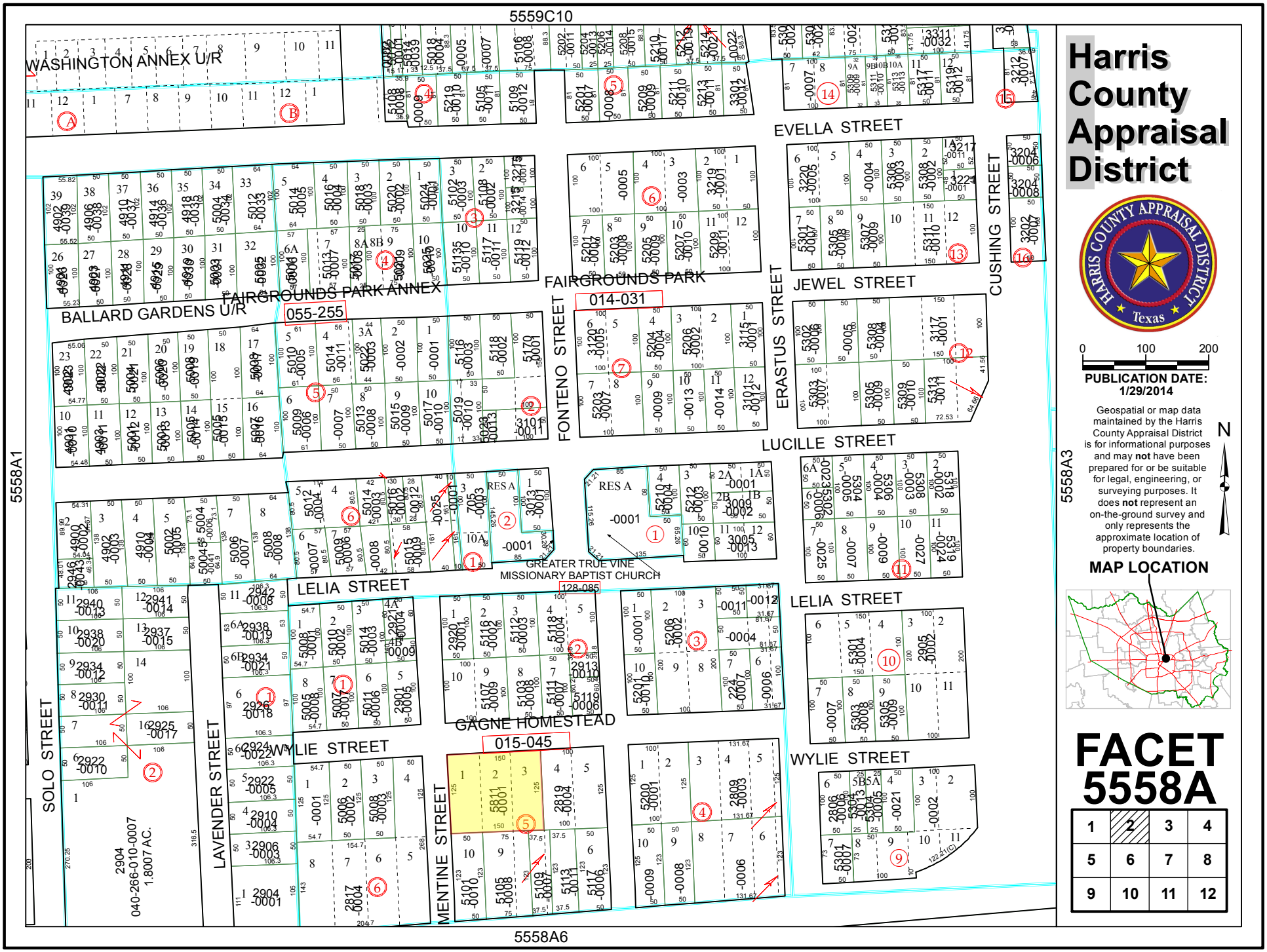
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0129
Date: January 7, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 27th day of December, 2012, we find the following:

Title Vested In:

Tillie Potts Benson (by Deed filed for record under Volume 1821, Page 313 of the Deed Records of Harris County, Texas and by the Estate of Alex Potts - Probate #48382)

Property Description: (Map ID# 10) (Tax ID# 014-143-000-0001)

Lots One (1), Two (2) and Three (3), in Block Five (5), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

2) By City of Houston, Code of Ordinances, a Notice of Public Hearing was filed under Harris County Clerk's File No. Y844718, it was determined there may be a necessity for a demolition lien against the herein described property. Further, pursuant to said ordinance, an "Order of the Hearing Official" dated November 3, 2005, recorded under Harris County Clerk's File No. Y883003.

3) Notice of involuntary lien in connection with demolition (city tax account No : 014-143-000-0001) filed on January 17, 2008 , under Harris County Clerk's File No. 20080027828, executed by the City of Houston, claiming a lien on the subject property, against Tillie Potts Benson, as owner, in the amount of $1,220.00 , plus cost and interest.

Involuntary Liens:

1) We find reference to Cause No. 2012-47859, in the District Court of Harris County, Texas, styled Harris County, et al vs. Tillie Potts Benson. It is assumed that said cause of action is for delinquent taxes due on subject property.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 16

HCAD ID - 0141430000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5117 Liberty Rd, Houston,TX 77026 (Map ID 16, HCAD ID 0141430000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[31]				Property Ownership		Anticipated Filing Date[32]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[31] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[32] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Six (6) in Block Five (5), of Finn Subdivision out of Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Jorge D. Rivera (Owner) with an address of 5117 Liberty Road, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

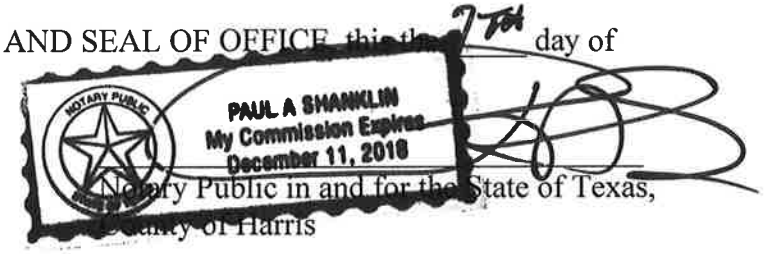
Executed this 7th day of April, 2015.

By: Jorge Rivera
Name: Jorge D. Rivera

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Jorge D. Rivera known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 7th day of April, 2015.



Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

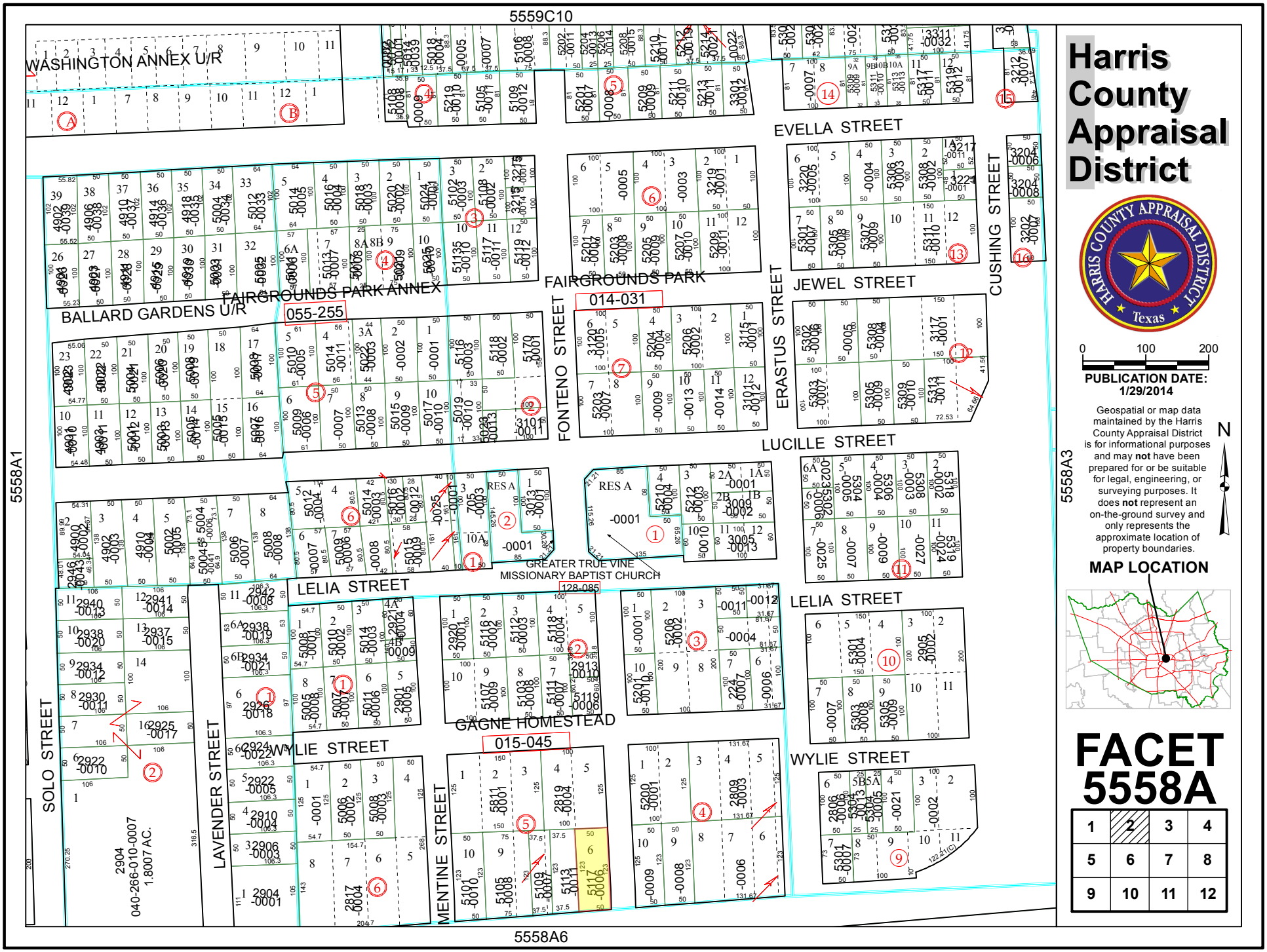
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
055-255
014-031
128-085
015-045
EVELLA STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
FONTENO STREET
ERASTUS STREET
CUSHING STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE: 1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET 5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0183
Date: January 11, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Jorge D. Rivera (by Warranty Deed filed for record under Harris County Clerk's File No. 20070252540)

Property Description: (Map ID# 16) (Tax ID# 014-143-000-0006)

Lot Six (6), in Block Five (5), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on August 29, 1957, filed under Volume 2950, Page 38 of the Deed Records of Harris County, Texas, executed by the City of Houston, showing portions of Liberty Road, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

2) A Vendor's Lien was retained in Deed dated April 20, 2007, filed for record on April 26, 2007, under Harris County Clerk's File No. 20070252540, executed by Martin Halick, to Jorge D. Rivera, securing one certain promissory note of even date therewith in the principal amount of $56,637.00, payable to the order of Crosby State Bank; said note and lien being additionally secured by Deed of Trust of even date therewith, in favor of Mark G. Mulloy, as Trustee, together with all terms, conditions and stipulations contained therein, including any additional indebtedness secured thereby, filed for record on April 26, 2007, under Harris County Clerk's File No. 20070252541.

Involuntary Liens:

1) Abstract of Judgment filed May 24, 2005, under Harris County Clerk's File No. Y490426, styled the State of Texas, vs. Jorge Rivera, in the principal amount of $679.00, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 23

HCAD ID - 0140410000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5301 Liberty Rd, Houston,TX 77026 (Map ID 23, HCAD ID 0140410000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[45]				Property Ownership		Anticipated Filing Date[46]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[45] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[46] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lots Seven (7) in Block Nine (9), of Fairground Park Addition, subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, page 357 of the Deed Records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was 57so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Geneva Crump (Owner) with an address of 5301 Liberty Road, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 10TH day of March, 2015.

Name: Geneva Crump, Owner

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _ day of March, 2015, personally appeared Geneva Crump, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10TH day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

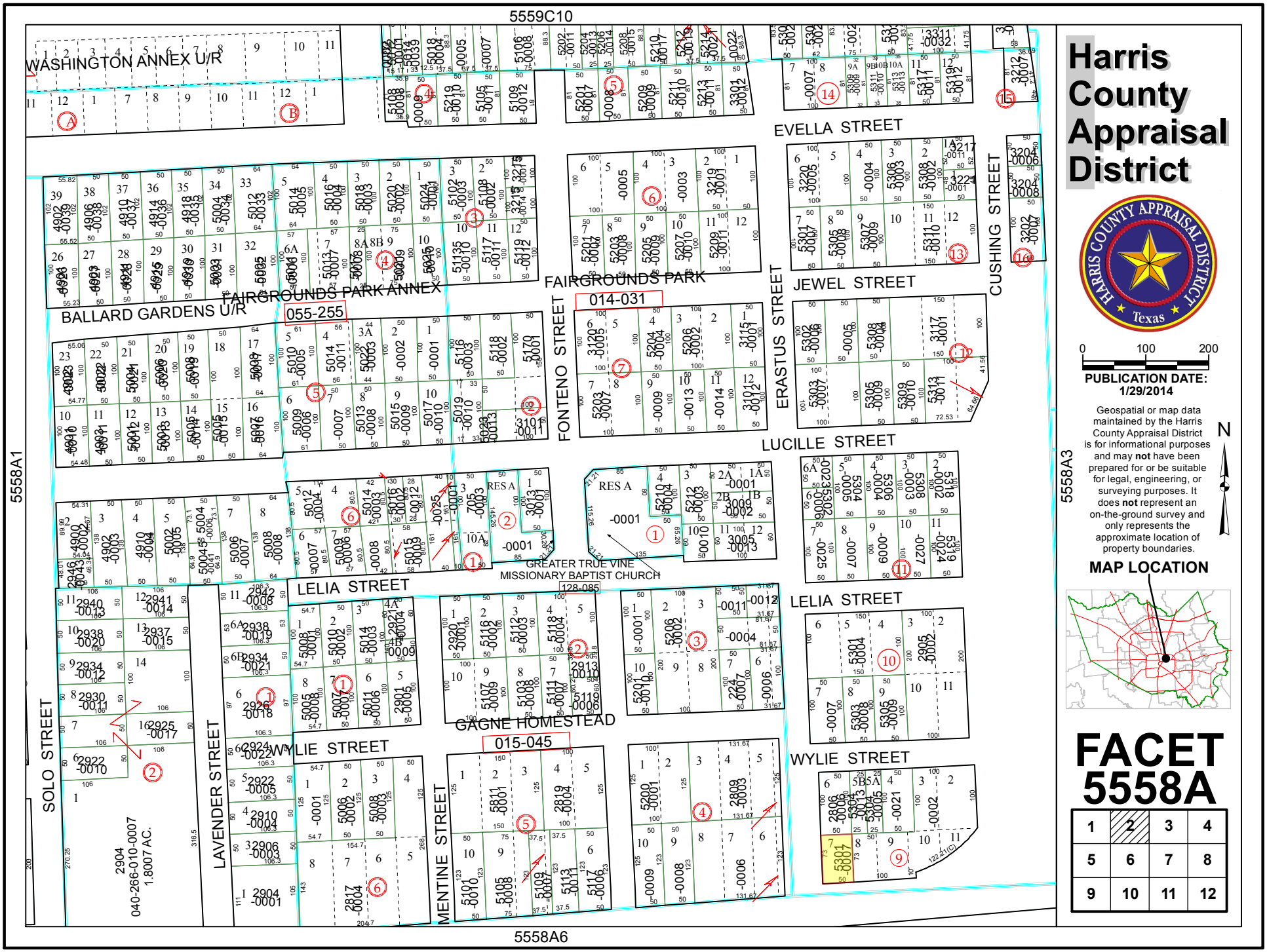
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9064
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In:

Geneva Henry, a/k/a Geneva Crump (by Deed filed for record under Harris County Clerk's File No. C159988)

Property Description: (Map ID# 23) (Tax ID# 014-041-000-0007)

Lot Seven (7), in Block Nine (9), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 357 of the Deed Records of Harris County, Texas, SAVE AND EXCEPT the South 3 feet thereof as conveyed to Harris County by deed filed for record under Volume 959, Page 357 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Notice of Public Hearing filed December 12, 2011, under Harris County Clerk's File No. 20110517152, pursuant of said notice a "Building and Standards Commission Order" dated January 11, 2012 and filed for record January 13, 2012, under Harris County Clerk's file No. 20120018233, it was determined that subject property be posted as a dangerous building and must be either repaired or demolished. Pursuant thereto, the following: Notice of Intent to File Lien in connection with demolition, filed on August 28, 2012 , under Harris County Clerk's file No. 20120395123.

Involuntary Liens:

1) We find reference to Cause No. 2009-42807, in the District Court of Harris County, Texas, styled Houston ISD, etal vs. Geneva Henry, etal. It is assumed that said cause of action is for delinquent taxes due on subject property.

2) Abstract of Judgment filed May 12, 2009, under Harris County Clerk's File No. 20090200226, styled Reed Credit Union, vs. Geneva Crump, in the principal amount of $4,012.00, plus cost, interest and attorney's fees.

3) Abstract of Judgment filed December 22, 2010, under Harris County Clerk's File No. 20100543048, styled Houston ISD, etal, vs. Geneva Henry, in the principal amount as set out therein, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

person whose name _ subscribed to the foregoing instrument of writing, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.
Given under my hand and seal of office, at Houston Texas, this 19 day of April A.D.1934.

R. R. Carter, Notary Public in and for Harris County, Texas (Seal)

Filed for record July 19,1934 at 2.10 o'clock P.M.Recorded July 24,1934 at 11.40 o'clock A. M.
Albert Townsend Clerk County Court,Harris County Texas.By M. Meritt Deputy

- - - - - - - - - - - - - - - - - -

No.625326

Lena Cash To County of Harris

Deed

The State of Texas County of Harris Know all men by these presents: That I, Lena Cash, a feme sole of the County of Harris, and State of Texas, for and in consideration of the sum of one & no/100 ($1.00) dollars to me in hand paid by the County of Harris, in the State of Texas, the receipt of which is hereby acknowledged, and the further consideration of establishing and maintaining a public road over and across the land hereinafter described, Have remised, released, and quit-claimed, and by these presents do remise, release and quit-claim, unto the said County of Harris, the right of way 3.0 feet in width, over and cross 150 sq.ft. of the Harris & Wilson survey of land, situated in said County of Harris, and State of Texas, said right of way to cross said land as follows, to-wit: Being a strip of land off of the south line of lot 7 block 9, Fairgounds Park Subdivision out of the Harris and Wilson Survey, being a part of the same land conveyed to Lena Cash by Angelo Candelari as recorded in volume_ page_ Harris County deed records, and being more particularly described as follows, to-wit: Beginning at the southwest corner of the Lena Cash lot 7, block 9, Fairgrounds Park Subdivision; thence north following west line of said lot, a distance of 3 feet; thence east parallel to south line of said lot to the east line of said lot a distance of 50 feet; thence south along the east line of said lot 7 a distance of 3 feet; thence west following the south line of said lot a distance of 50 ft. to place of beginning, containing 150 square feet. It is understood and agreed that Harris County will replace culvert in front of the property. To have and to hold the aforesaid right of way unto the said County of Harris to be used as a public road forever.
Witness my hand this 10th day of April 1934. Lena Cash
The State of Texas County of Harris Before me, the undersigned authority, in and for Harris County, Texas on this day personally appeared Lena Cash, a feme sole known to me to be the person whose name is subscribed to the foregoing instrument of writing, and acknowledged to me that she executed the same for the purposes and considerations therein expressed.
Given under my hand and seal of office, at Houston, Texas, this 10th day of April A.D.1934.

J.B.Marmion,Notary Public in and for Harris County, Texas. (Seal)

Filed for record July 19,1934 at 2.10 o'clock P.M.Recorded July 24,1934 at 11.55 o'clock A.M.
Albert Townsend Clerk County Court,Harris County, Texas. By M Meritt, Deputy

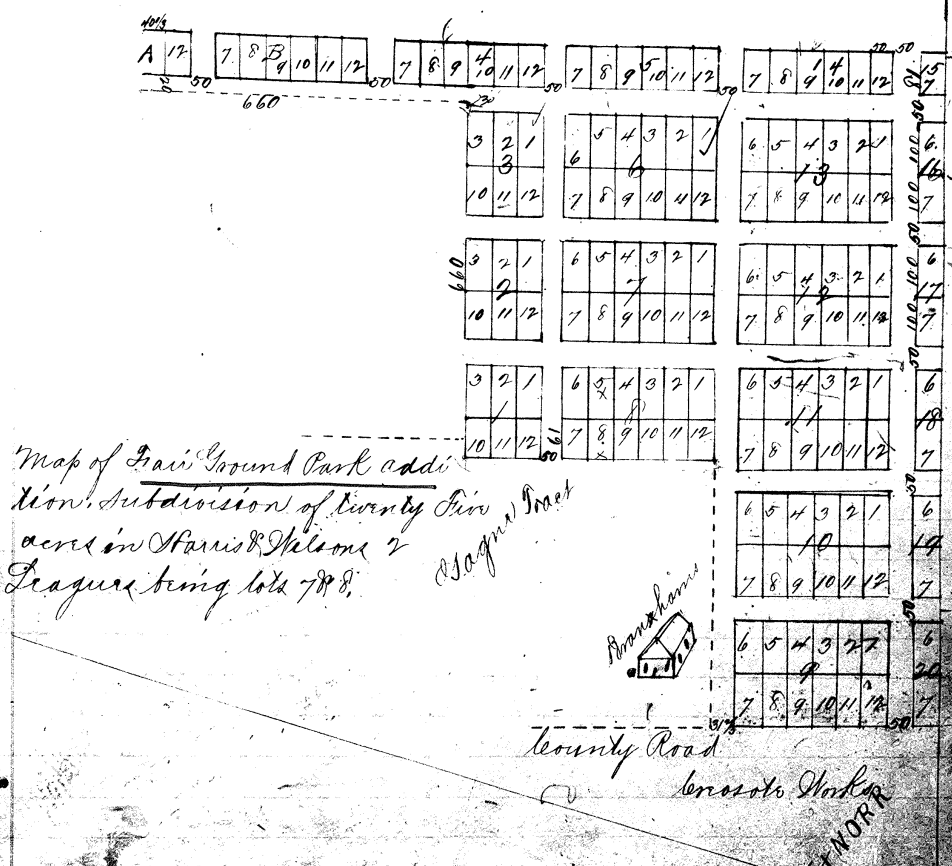
- - - - - - - - - - - - - - - - - -

No.625327

E. G. Sanders To County of Harris

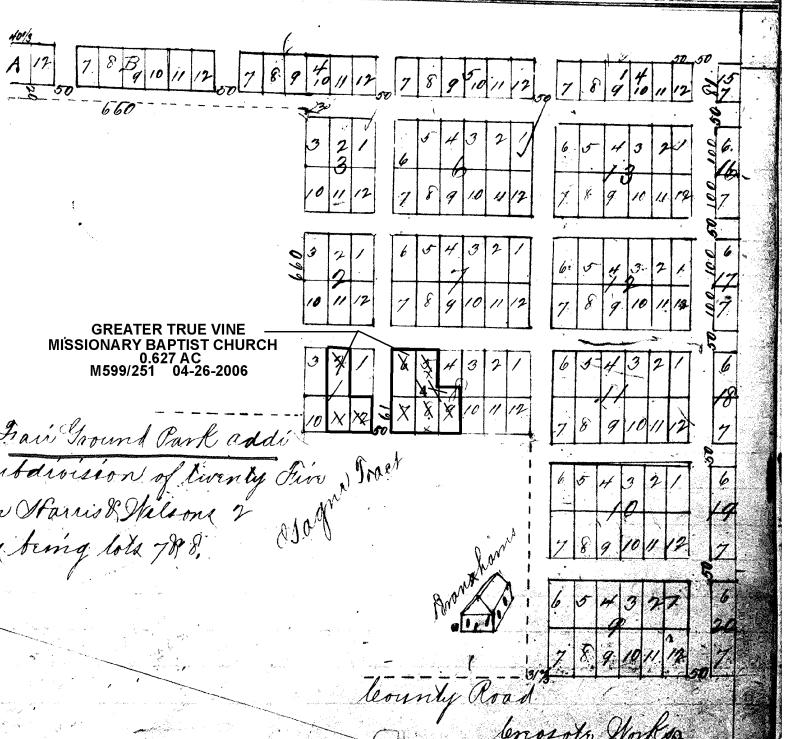
Deed

The State of Texas County of Harris Know all men by these presents: That I, E. G. Sanders of the County of Harris, and State of Texas, for and in consideration of the sum of one & no/100 ($1.00) dollars to _ in hand paid by the County of Harris in the State of Texas, the receipt of which is hereby acknowledged, and thefurther consideration of establishing and maintaining a public road over and across the land hereinafter described,



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the foregoing power of Attorney this 23rd day of January 1895 Henry Kline & Kline, The State of Texas County of Harris, Before me Alex. Hartlingick a Notary Public in and for Harris County State of Texas, on this day personally appeared Henry Kline and J. F. Kline Kline husband and wife, Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed, And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry F. Kline, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

VOL-81-460



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the forgoing power of Attorney this 23rd day of January 1895 Henry Kline & J. F. Kline, The State of Texas County of Harris. Before me Alex. Barthingick a Notary Public in and for Harris County State of Texas. On this day personally appeared Henry Kline and J. F. Kline his wife husband and wife. Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed. And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry Kline acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 28

HCAD ID - 0141400000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5118 Lelia St, Houston,TX 77026 (Map ID 28, HCAD ID 0141400000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[53]				Property Ownership		Anticipated Filing Date[54]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[53] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[54] Specify date or amount of time after RAP approval.

Restrictive Covenant

8

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 4 & 5 in block two (2)in Subdivision of Shares 2 and 3 (Firm Subdivision) of the Gagne Homestead a subdivision in Harris County, Texas, according too the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater True Vine Baptist Church (Owner) with an address of 3010 Fontitont, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 17th day of February, 201.

Greater True Vine Baptist Church
By: _____
Name: Matthew R. Alix Sr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Matthew R. Alix Sr.,Pastor of Greater True Vine Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 17th day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

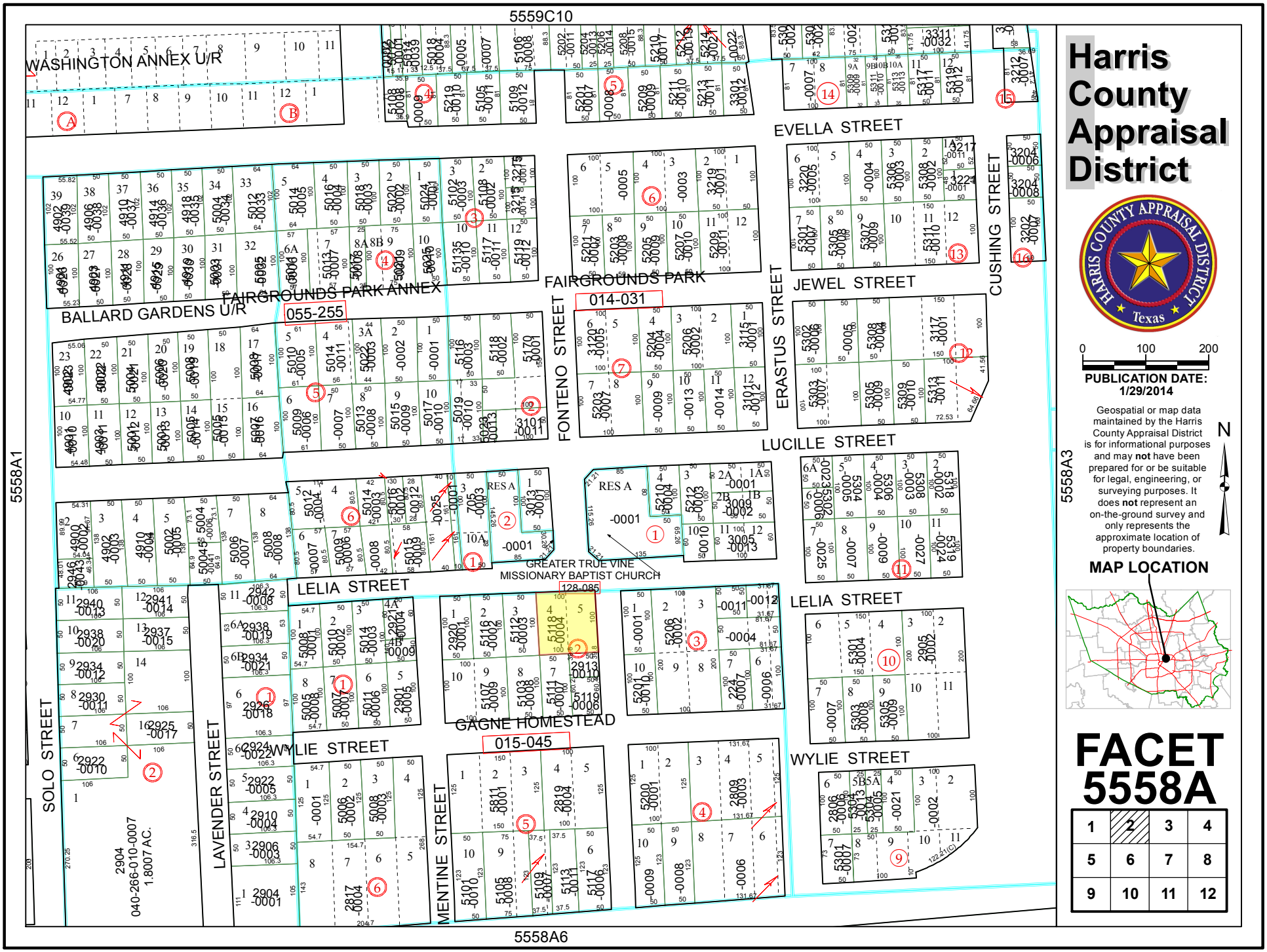
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9441
Date: December 21, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 16th day of December, 2012, we find the following:

Title Vested In:

Greater True Vine Baptist Church (by Warranty Deed filed for record under Harris County Clerk's File No. N995654)

Property Description: (Map ID#28) (Tax ID# 014-140-000-0004)

Lots Four (4) and Five (5), in Block Two (2), of Subdivision of Shares 2 and 3 (Finn Subdivision) of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 30

HCAD ID - 0141410000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 30, HCAD ID 0141410000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[57]				Property Ownership		Anticipated Filing Date[58]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[57] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[58] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 2, 3, 8 and 9 in Block 3 of Finn Subdivision of the Gagne Homestead, a subdivision in Harris Country, Texas according the map or plat thereof recorded in Vol.1, page 55 of the map records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater True Vine Missionary Baptist Church (Owner) with an address of 3010 Fontinot, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19 day of FEBRUARY, 2015.

~~[OWNER]~~ GREATER TRUE VINE BAPTIST

By: _____

Name: Matthew R. Alix Sr., Pastor

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Matthew R. Alix, Sr., Pastor, of [owner], known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 17th day of February, 2015.

_____

Notary Public in and for the State of Texas,
County of Harris

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

My Commission Expires: _____

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

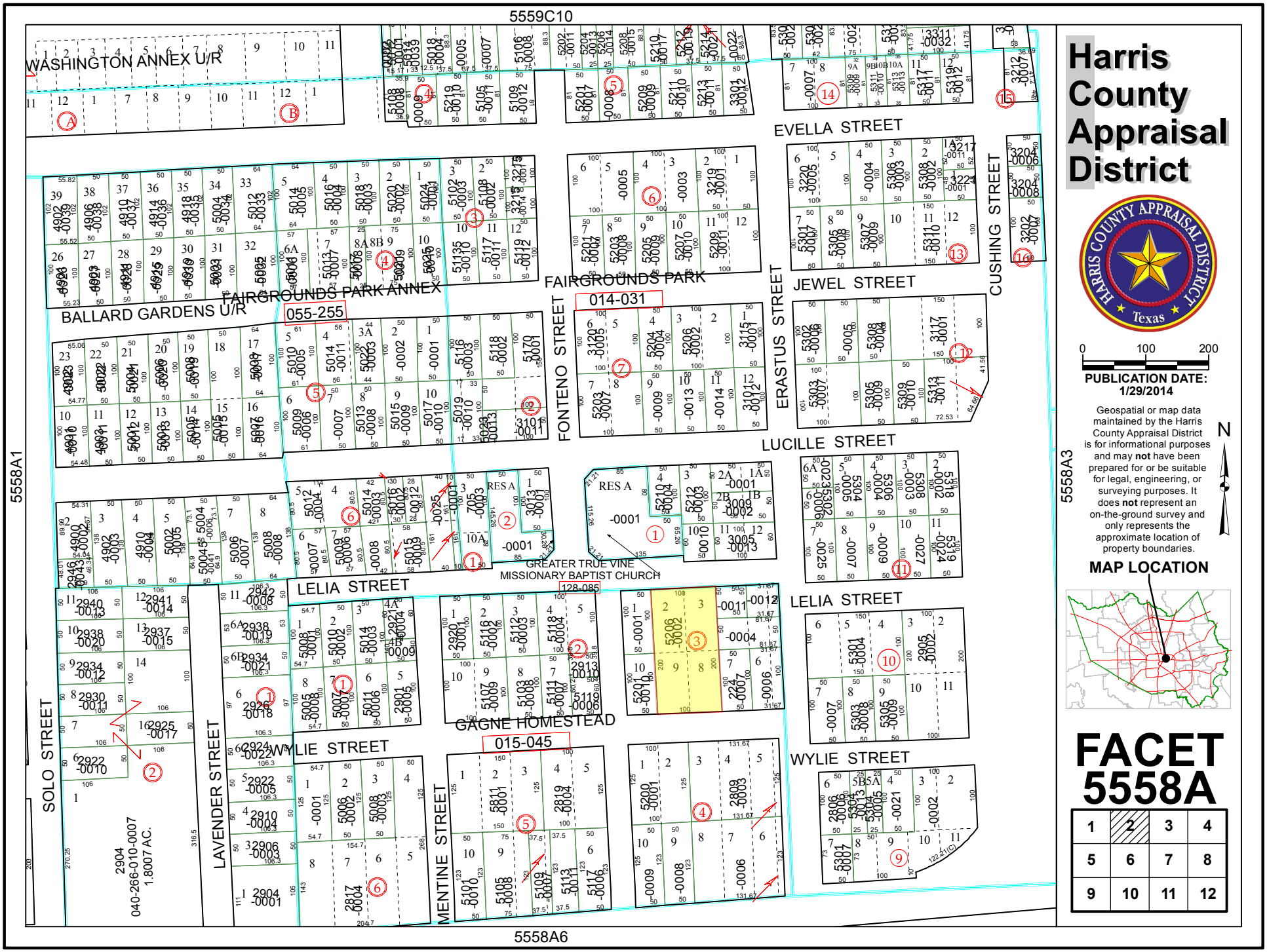
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9447
Date: December 21, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 16th day of December, 2012, we find the following:

Title Vested In:

Greater True Vine Missionary Baptist Church (by Warranty Deed filed for record under Harris County Clerk's File No. 20070175846)

Property Description: (Map ID#30) (Tax ID# 014-141-000-0002)

Lots Two (2), Three (3), Eight (8) and Nine (9), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) By City of Houston, Code of Ordinances, a notice of public hearing was filed under Harris County Clerk's File No. S605168, it was determined there may be a necessity for a demolition lien against the herein described property. Further, pursuant to said ordinance, we find of record an "Order of the Building Official" recorded under Harris County Clerk's File No. S647776.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 33

HCAD ID - 0141400000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5105 Wylie St, Houston,TX 77026 (Map ID 33, HCAD ID 0141400000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[63]				Property Ownership		Anticipated Filing Date[64]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[63] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[64] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Nine (9) in block two (2), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof.)

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Willie Potts, heir and devisee of Maryland Potts (Owner) with an address of 5107 Wylie Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

By: Willie Potts
Name: Willie Potts

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _____ day of April, 2015, personally appeared Willie Potts Carr, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22 day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL-A SHA[illegible]
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

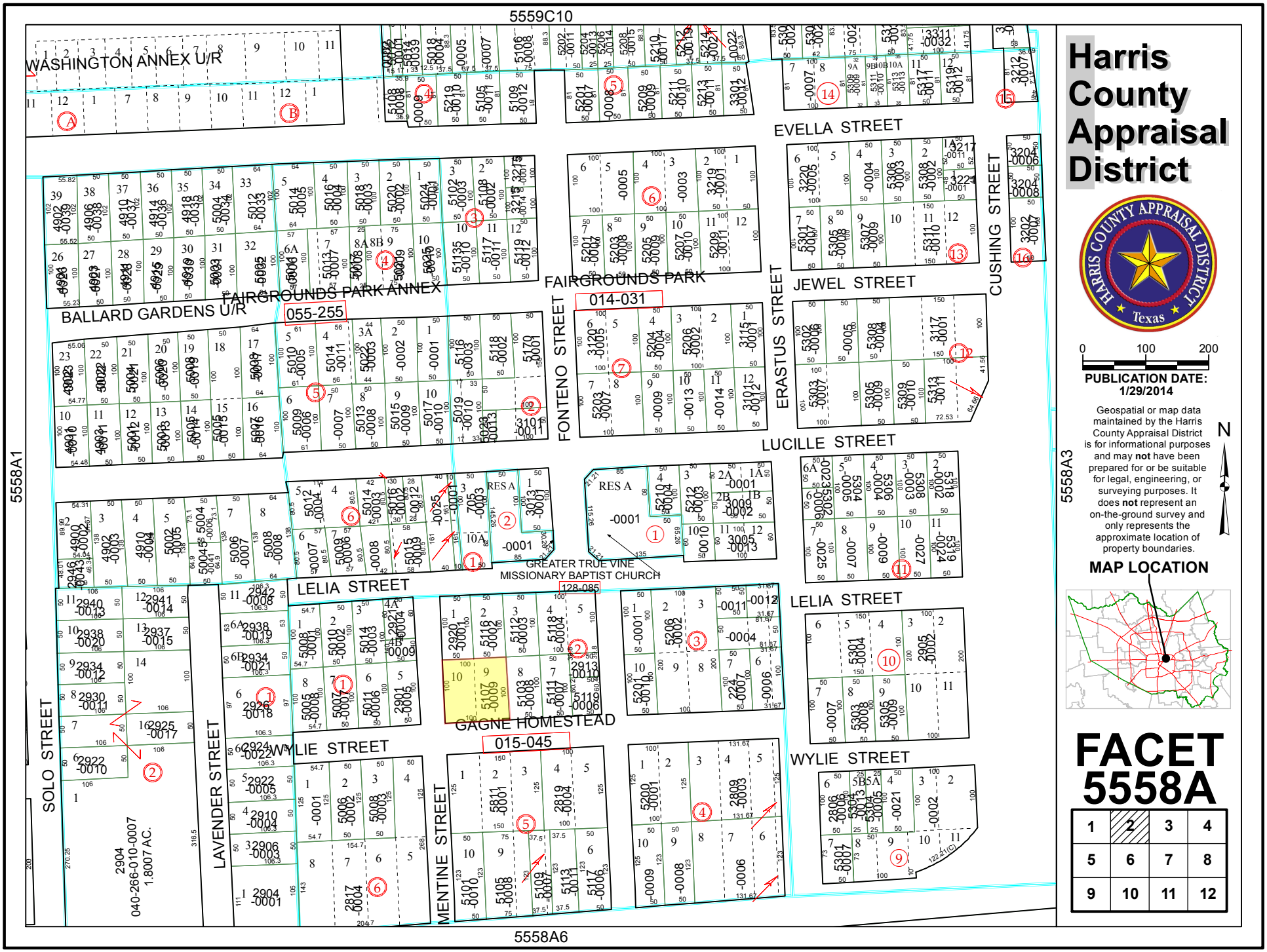
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0506
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

The Heirs and Devisees of the Estate of Maryland Potts, deceased (by Deeds filed for record under Volume 410, Page 518 and Volume 545, Page 368, both of the Deed Records of Harris County, Texas) (See notes)

Property Description: (Map ID# 33) (Tax ID# 041-140-000-0009)

Lots Nine (9) and Ten (10), in Block Two (2), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

Notes:

- We find no heirship/probate proceedings pertaining to the Estate of Maryland Potts, deceased filed of record in Harris County, Texas.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

FC29142

LIEN

JAN 31-77 696758 et 029142 LST A PD 3.50

157-20-1662

FILED
JAN 31 9 56 AM 1977
COUNTY CLERK
HARRIS COUNTY, TEXAS

NOTICE OF LIEN

By direction of the City Council of the City of Houston (in Harris County, Texas) notice is hereby given that such City Council, being the governing body of said City, did by ordinance passed and approved January 12, 1977, determine that it is necessary that the hereinafter designated portions of Lavender, Clementine and various other streets in the City of Houston, Texas, known as topping Project No. 303

be improved, and did order that the same be improved in accordance with certain plans and specifications in such ordinance referred to, and did order that a portion of the cost of such improvement be specially assessed as a lien upon property abutting upon said portion of said streets, all as provided by Article 1105-b, Revised Civil Statutes; and notice is hereby given as required by Article 1220-a, Revised Civil Statutes; that a portion of the cost of such improvement is to be and will be specially assessed as a lien upon property abutting thereon.

The respective portion of the street as contained in the attached lists arereferred to as Topping Project No. 303.

Done and signed by me, the City Secretary of said City in its name, this 12th day of January,1977, by direction of its City Council given and contained in the ordinance aforesaid.

City Of Houston

By Anna Russell
City Secretary of the City of Houston

PLEASE RETURN TO:
ANNA RUSSELL, CITY SECRETARY
RM. 203, CITY HALL
P. O. BOX 1562
HOUSTON, TEXAS 77001

157-20-1663

STREET LIST

CONSTRUCTION OF PAVING, LAVENDER, CLEMENTINE, FONTINOT, WYLIE AND LELIA STREETS, KNOWN AS TOPPING PROJECT NO. 303, C.D. 1

GROUP I

Streets to be improved with *Semi-Rigid Base, 1½" Type "D" Hot Mix Asphaltic Concrete Surfacing, Concrete Curb and Gutter and Concrete Sidewalks Both Sides

STREET NAME	ROADWAY WIDTH	BASE & SURF. WIDTH	FROM	TO
Lavender	35'	32'	N.P.L. Liberty Road	564.3' N. N.P.L. Liberty Road
Clementine	27'	24'	N.P.L. Liberty Road	16' S. S.P.L. Lucille
Fontinot	27'	24'	N.P.L. Liberty Road	17' S. S.P.L. Lucille
Fontinot	27'	24'	17.33' N. N.P.L. Jewel	15' S. S.P.L. Evella
Wylie	27'	24'	199.8' W. W.P.L. Clementine	18'W. W.P.L. Erastus
Wylie	27'	24'	10' E. E.P.L. Erastus	W.P.L. Cushing
Lelia	27'	24'	189.85' W. W.P.L. Clementine(As Measured along S.P.L. Lelia)	W.P.L. Cushing

*SEMI-RIGID BASE SHALL BE:

1. 7" Cement Stabilized Shell Base Course,
2. 7" Lime Stabilized Crushed Limestone Base Course,
3. 6" Hot Mix Asphaltic Concrete Base, and/or
4. 8" Lime Stabilized Pit-Run Gravel Base Course

157-20-1664

GROUP II

CONCRETE SIDEWALKS ONLY(Both Sides of Street)

STREET NAME	FROM	TO
Clementine	16' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	17' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	N.P.L. Jewel	17.33' N.N.P.L. Jewel
Fontinot	15' S.S.P.L. Evella	S.P.L. Evella
Wylie	18' W.W.P.L. Erastus	W.P.L. Erastus
Wylie	E.P.L. Erastus	10' E.E.P.L. Erastus

Dollars on the 3rd day of October 1928 with interest at the rate of seven per cent per annum payable annually on the 1st day of September, of each year, interest from date, it being understood, that the first interest payment due on October 3rd, 1919, will be only for eleven months. (2) To pay all taxes an assessments that may be levied, assessed, or become due upon the said premises, at lest thirty days before any penalty will accrue thereon, if unpaid, and to exhibit the receipt therefor to the vendor. This covenant as to taxes shall mean those taxes accruing subsequent to the year 1920, the taxes for 1918, 1919 to be paid by the vendor. (3) To insure and keep insured in at least the sum of $____ against loss or damage by fire during the life of this agreement, the buildings now or hereafter erected upon the said premises, in companies satisfactory to the vendor, with loss, if any, payable to the vendor as his interest may appear, and to deposit the policy or policies with the vendor. THIRD: Provided, however, and this agreement is upon the expressed condition that, if default shall be made in the payment of the said several sums or any of them, or any part thereof, or the interest, or any part thereof, or in the performance or observance, or any of the covenants herein contained on the part of the purchaser, then the whole of the said principal sum, with accrued, interest thereon, shall at the election of the vendor become immediately due and payable, and the vendor shall have the right to terminate this agreement by giving to the purchaser ninety days written notice of such termination; and in the event of such termination, all payments made by the purchaser hereunto shall be retained by the vendor as liquidated damages for the breach of this agreement by the purchaser, and the vendor shall have the right to re enter and take possession of said premises with all the buildings and improvements then thereon, it being agreed that until such default, the purchaser shall have possession of the said premises on and after November 1st, 1918. FOURTH: All the covenants and agreements herein contained shall inure to the benefit of and bind the respective heirs, personal representatives, and assigns of the parties hereto. ----- Mrs. Rebecca Reynolds, E.H. Reynolds.

State of Texas: County of Harris: Before me, Elliott Cage a Notary Public, of the County of Harris, in the State of Texas, on this day personally appeared E.H. Reynolds and Rebecca Reynolds his wife, both known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they each executed the same for the purposes and consideration therein expressed and the said Rebecca Reynolds wife of the said E.H. Reynolds having been examined by me privily and apart from her husband, and having the same fully explained to her, she the said Rebecca Reynolds acknowledged such instrument to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

Given under my hand and seal of office this 3rd day of October A.D., 1918.

(Seal) Elliott, Cage, Notary Public Harris County,Texas.

Filed for Record Jan 3, 1919 at 2-30 o'clock P.M. Recorded Jan. 7, 1919 at 3-50 o'clock P.M.

Albert Townsend Clerk County Court, Harris County,Texas By J H Parker Deputy

- -

No. 1560

E.A. Finn, -TO- Maryland Potts,

General Warranty Deed:

The State of Texas: County of Harris: Know all men by these presents: That I, E.A. Finn, of the County of Harris and State of Texas, for and in consideration of the sum of One Hundred and Fifty ($150.00) Dollars, cash in hand to me paid by Maryland Potts, the receipt of which is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey, unto the said Maryland Potts of the County of Harris, State of Texas, the following described property, to-wit: All that certain tract or parcel of land situated in Harris County,Texas, and being Lot Number Ten (10) in Block Number Two (2) fifty by one hundred feet (50x100) out of FinnSubdivision of shares 2 and 3 a part of the Gagne Homestead out of the Harris and Wilson two-league grant in Harris County,Texas, according to the map and plat of said subdivision recorded in Book 1, Page 55, of the Deed Records of Harris County,Texas.

to which plat reference is here made for a better description of said lot. TO have and to hold the above described premises, together with all and singular the rights and appurtenances thereto in any wise belonging, unto the said Maryland Potts, his heirs and assigns forever, and I do hereby bind myself, my heirs, executors and administrators, to warrant and forever defend, all and singular the said premises unto the said Maryland Potts, his heirs and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

Witness my hand at Houston, Texas, this 25th day of October A.D., 1918.

(Stamps cancelled 50¢ E.A.F. 10-25-18) E.A. Finn,

The State of Texas: County of Harris: Before me, Jake H. Sam a Notary Public in and for Harris County Texas, on this day personally appeared E.A. Finn, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this the 25th day of October A.D., 1918.

(Seal) Jake H. Sam, Notary Public Harris County, Texas.

Filed for Record Jan 3, 1919 at 3-00 o'clock P.M. Recorded Jan 7, 1919 at 4-25, o'clock P.M.

Albert Townsend Clerk County Court, Harris County, Texas By J H Roberts Deputy

- -

No. 1561

Mrs. Gertrude Cobb George, Et vir: -TO- James A Logan.

Assign. Vendor's Lien:

The State of Texas: County of Harris: Know all men by these presents: Whereas on or about October 12th 1918, James A. Logan assigned and transferred to Mrs. Gertrude Cobb George that certain vendor lien note for Twenty-four Hundred ($2400.00) Dollars, executed by J. Jennings payable to James A. Logan and secured by a Vendor's Lien on Lots Forty-three (43) and Forty four (44) in Block ten (10) of the Cascara Addition to the City of Houston, Harris County, Texas, to secure a certain indebtedness due by James A. Logan to Mrs. Gertrude Cobb George amounting to eight hundred and fifty ($850.00) Dollars, all of which is shown in said Assignment recorded in Vol. 411, page 151, of the Records of Deeds, Harris County, Texas, which is referred to, and Whereas the said James A. Logan has paid off in full the indebtedness so due to Mrs. Gertrude Cobb George, Now, in consideration of the premises, I Mrs. Gertrude Cobb George, joined by my husband, S.W. George, do hereby re-assign, transfer and deliver to the said James A. Logan the said vendor lien note for Twenty-four Hundred Dollars so executed by J. Jennings and secured on the property above referred to, and now declare that we have no further claim or interest in said vendor's lien note.

In Witness whereof we have hereunto signed our names on this December 31st. 1918.

Mrs. Gertrude Cobb George, S.W. George.

The State of Texas: County of Harris: Before me, the undersigned Notary Public in and for Harris County, Texas on this day personally appeared S.W. George and Gertrude Cobb George wife of S.W. George, known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration therein expressed. And the said Gertrude Cobb George, wife of the said S.W. George, have been examined by me privily and apart from her husband, and having the same by me fully explained to her, she, the said Gertrude Cobb George acknowledged such instrument to be her act and deed and she declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it. Witness my hand and seal of office this 3rd day of January A.D., 1919.

(Seal) E. Milroy, Notary Public, Harris County, Texas.

Filed for Record Jan 3, 1919 at 3-00 o'clock P.M. Recorded Jan 8, 1919 at 8-30 o'clock A.M.

Albert Townsend Clerk County Court, Harris County Texas By J H Roberts Deputy

- -

consideration therein expressed.

Given under my hand and seal of office this the 25th day of July, A. D. 1923.

R. A. Belcher, Notary Public, Harris County, Texas.(Seal).

Filed for Record Sept. 8, 1923, at 9.30 O'clock A.M. Recorded Sept.11,1923, at 9.40 O'clock A.M.

Albert Townsend Clerk County Court Harris County, Texas. By O E Neubaus Deputy.

- - - - - - - - - - - - - -

No. 126762

J. E. Tucker et ux -To- R. G. Ballinger

General Warranty Deed.

State of Texas. Harris County. Know all men by these presents: That we, J. E. Tucker and wife, Julia A. Tucker, of Harris County, Texas, for and in considerations of the sum of Five Hundred ($500.00) Dollars cash to us in hand paid by R. G. Ballinger, of Harris County, Texas, receipt of which is hereby acknowledged. Have granted, bargained, sold and conveyed, and do by these presents grant, bargain, sell and convey unto the said R. G. Ballinger, of Harris County, Texas, the following Real estate, to-wit:

Beginning at a point on the West line of the Humble Houston Public Road, which point is 959 feet north of the center line of the H. B. &. T. Railway; Thence North along the west line of said Houston-Humble Road 140 feet to corner; same being the Northeast corner of the Tucker Three Acre Tract; Thence West along the North line of said Three Acre Tract 375 feet to corner, same being the Northwest corner of said Tucker Three Acre Tract; Thence South along the West line of said tract 145 feet to corner; Thence East 375 feet to corner, place of beginning; and being out of the J. T. Harrell Survey in Harris County, Texas; To have and to hold the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging unto the said R. G. Ballinger, his heirs and assigns forever. And we do hereby bind ourselves, our heirs, executors and administrators to warrant and forever defend, all and singular the said premises unto the said R. G. Ballinger, his heirs and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

Witness our hands at Houston, Texas, this 6th day of September, 1923.

J. E. Tucker, Julia A. Tucker, (Stamps Can. 50¢)

State of Texas. Harris County. Before me, the undersigned authority, on this day personally appeared J. E. Tucker and wife, Julia A. Tucker, known to me to be the persons whose names are subscribed to the foregoing instrument of writing, and acknowledged to me that they executed the same for the purposes and considerations therein expressed.

And the said Julia A. Tucker, wife of the said J. E. Tucker, having been examined by me privily and apart from her said husband, and having the same by me fully explained to her, she, the said Julia A. Tucker, acknowledged such instrument to be her act and deed, and she declared that she had willingly signed the same for the purposes and considerations therein expressed, and that she did not wish to retract it.

Given under my hand and seal of office, at Houston, Texas, this 6th day of September, 1923.

George Tharp, Notary Public, Harris County, Texas. (Seal).

Filed for Record Sept. 8, 1923, at 9.35 O'clock A.M. Recorded Sept.11,1923, at 9.50 O'clock A.M.

Albert Townsend Clerk County Court Harris County, Texas. By O E Neubaus Deputy.

- - - - - - - - - - - - - -

No. 126765

B. Candelari, -To- Maryland Potts

General Warranty Deed.

The State of Texas. County of Harris. Know all men by these presents: That I, B.Candelari,

Title Data, Inc. TX TDI28092 HA D 545/368.001

of Harris County, Texas, for and in consideration of the sum of Five Hundred Dollars ($500.00) to me in hand paid by Maryland Potts, of Harris County, Texas, the receipt of which is hereby acknowledged. Have granted, bargained, sold and conveyed, and do by these presents grant, bargain, sell and convey unto the said Maryland Potts, the following described lands, property and premises to-wit: Lot No. Nine (9) in Block No. Two (2) out of the Finn Subdivision of shares 2 and 3 a part of the Gagne Homestead, out of the Harris and Wilson Two League Grant, in Harris County, Texas, being the same property conveyed to me by E. A. Finn, by deed dated October 27th, 1917, and duly recorded in the Deed Records of Harris County, Texas, in Volume 396, page 106, and for a more particular description of the said property reference is here made to the said deed, its said record and the references therein contained. To have and to hold the above described lands, property and premises, together with all and singular the rights and appurtenances thereto in anywise belonging unto the said Maryland Potts, his heirs and assigns forever. And I do hereby bind myself, my heirs, executors and administrators to warrant and forever defend, all and singular, the said lands and premises unto the said Maryland Potts, his heirs and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

The grantee herein assumes the taxes and assessments, if any, against the said property for the years 1919-1920-1921-1922-1923.

In testimony whereof witness my hand at Houston, Texas, on this the 27th day of August, A.D.1923.

B. Candelari, (Stamps can. 50¢)

The State of Texas. County of Harris. Before me, the undersigned Notary Public, in and for Harris County, Texas, on this day personally appeared B. Candelari, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office, at Houston, Texas, on this the 27th day of August, A.D.1923.

W. J. Armstrong, Notary Public, in and for Harris County, Texas.(Seal).

Filed for Record Sept. 8,1923, at 9.45 O'clock A.M. Recorded Sept.11,1923, at 10.05 O'clock A.M.

Albert Townsend Clerk County Court Harris County Texas By E. Neuhaus Deputy.

- - - - - - - - - - - -

No. 126766

Geo. E. Ayers -To- Mrs. Mary E. Ayers

General Warranty Deed.

The State of Texas. County of Harris. Know all men by these presents: That I, Geo. E. Ayers, of the County of Harris, and State of Texas, for and in consideration of the sum of Ten ($10.00) Dollars to me in hand paid by Mrs. Mary E. Ayers, out of her own separate property and estate, the receipt of which is hereby acknowledged and confessed. And the assumption by the said Mrs. Mary E. Ayers of the payment of all vendor's and mechanic's liens, notes and debts now due or that may hereafter become due on said property and the release of the grantor hereof from the payment of any and all of said indebtedness. Have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said Mrs. Mary E. Ayers, of the County of Harris, and State of Texas, to her sole and separate use and benefit, all that certain lot, or parcel of land situated in the County of Harris, and State of Texas, in Montrose Addition in the City of Houston, Texas, amended map of which is recorded in Vol. 5, page 32, of the Harris County Map Records to which reference is here made for description, said land being situated on the South Side of Buffalo Bayou, a part of the Obedience Smith Survey and more particularly described as follows, to-wit: West 50 x 120 feet of the East 64.3 x 120 feet of Lot Five (5) in Block Fourteen (14) together with all improvements thereon.

To have and to hold the above described premises, together with all and singular the rights and

Title Data, Inc. TX TDI28092 HA D 545/369.001

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 34

HCAD ID - 0141390000005

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2901 Clementine St, Houston,TX 77026 (Map ID 34, HCAD ID 0141390000005)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[65]				Property Ownership		Anticipated Filing Date[66]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[65] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[66] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Five (5) in Block (1) one, of Finn Subdivision out of the Gagne Homestead a Subdivision, a subdivision In Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Mary Bass Ross (Owner) with an address of 5010 Wylie, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24 day of March, 2015.

By: _____
Mary Bass Ross

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Mary Bass Ross, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

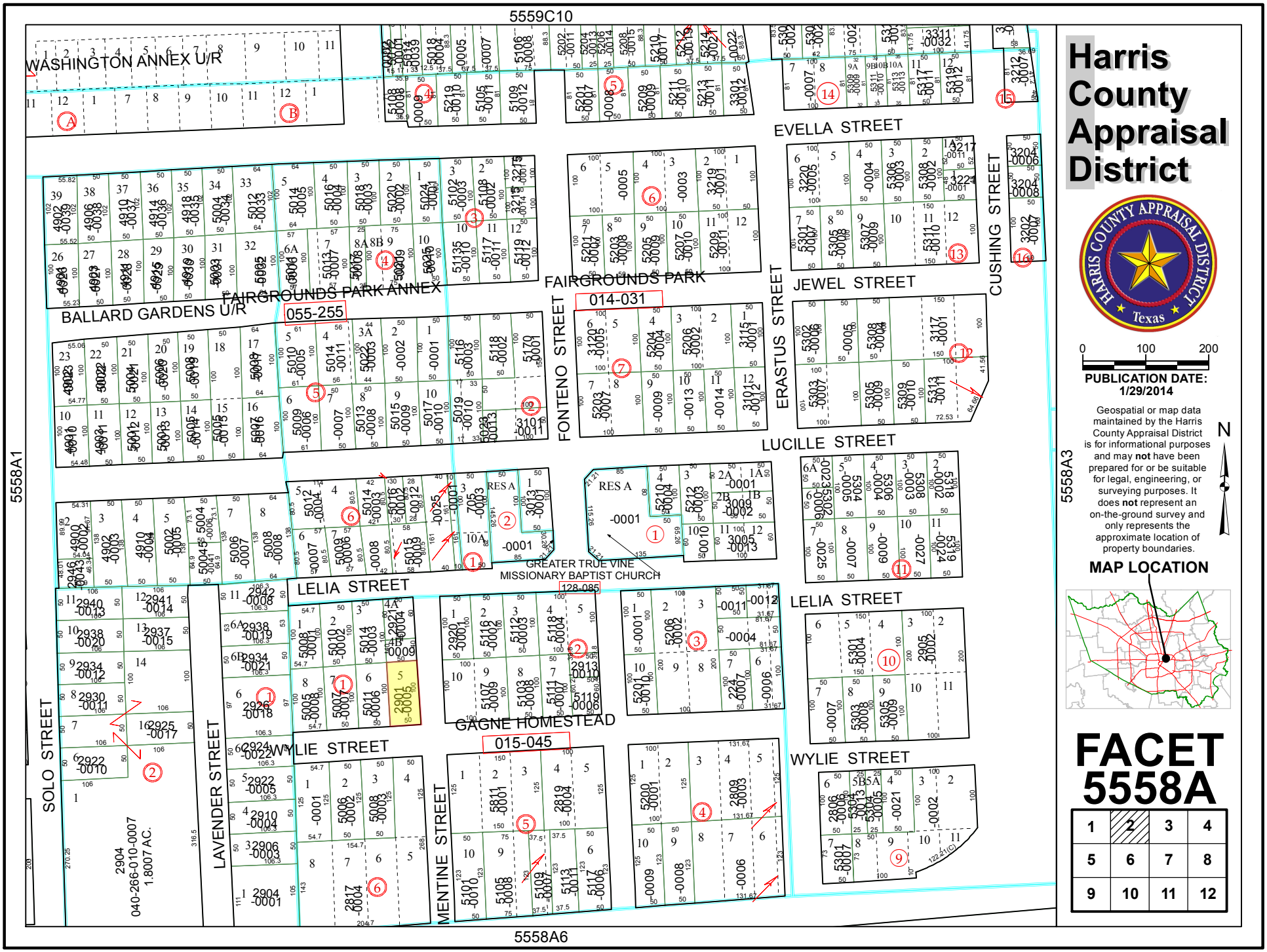
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9247
Date: December 13, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Mary Lee Bass, a/k/a Mary B. Ross, Lee Otis Jackson, Gilbert Eugene Jackson, Jr., Mary Alicia Carroll, Audrey Mae Sholars, Stella Louise Price, the Heirs and Devisees of the Estate of Johnny Lawrence Jackson, deceased and any unknown Heirs of the Estate of Gilbert Jackson, deceased, (by Warranty Deed filed for record under Harris County Clerk's File No. D262288 and Quitclaim Deeds filed for record under Harris County Clerk's File Nos. V630621 and V630622)

Property Description: (Map ID# 34) (Tax ID# 014-139-000-0005)

Lot Five (5), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) By City of Houston, Code of Ordinances, a notice of public hearing was filed under Harris County Clerk's File No. P925381, it was determined there may be a necessity for a demolition lien against the herein described property. Further, pursuant to said ordinance, title company finds of record an "Order of the Building Official" dated July 11, 1994, recorded under Harris County Clerk's File No. P971330.

Notes:

Title is vested as shown above by virtue of the following:

- Warranty Deed filed for record under Harris County Clerk's File No. D262288, executed by Maurice Krull to Lloyd Newman and Jane Newman.

- Subsequently, we find of record an Affidavit of Heirship regarding the estate of Lloyd Newman, deceased, filed for record under Harris County Clerk's File No. D781386, wherein Mary Jane Newman, a/k/a Jane Newman and Mary Lee Bass were purported to be the only heirs.

- We then find of record Affidavits of Heirship regarding the estate of Mary Jane Newman, a/k/a Jane Newman, deceased filed for record under Harris County Clerk's File Nos. V630623 and V630624, wherein the heirs are purported to be Mary B. Ross, a/k/a Mary Lee Bass and Gilbert Jackson, deceased. The heirs of Gilbert Jackson are therein stated as: Johnny Lawrence Jackson, deceased, "Mr. Unknown", Lee Otis Jackson, Gilbert Eugene Jackson, Jr., Gloria Jean Williams, Mary Alice Carroll, Audrey Mae Sholars, Stella Louise Price and Cynthia Diane Jean.

- We find of record a Quitclaim Deed filed for record under Harris County Clerk's File No. V630621, executed by Gloria Jean Williams to Mary B. Ross.

- We find of record a Quitclaim Deed filed for record under Harris County Clerk's File No. V630622, executed by Cynthia Diane Jean to Mary B. Ross.

- We find no probate of record as to the Estate of Johnny Lawrence Jackson, deceased.

Involuntary Liens:

1) Abstract of Judgment filed July 30, 2001, under Harris County Clerk's File No. V204500, styled USA, vs. Stella L. Price, in the principal amount of $1,749.00, plus cost, interest and attorney's fees.

2) Notice of child support Lien filed March 25, 2003, under Harris County Clerk's File No. W526423, against Gilbert Jackson, in the principal amount of $4,802.00, plus costs and interest.

3) Abstract of Judgment filed April 3, 2012, under Harris County Clerk's File No. 20120140334, styled Cach, LLC, vs. Lee Jackson, in the principal amount of $3,582.00, plus cost, interest and attorney's fees.

4) The records reflect Bankruptcy proceedings filed in federal court on December 3, 2012 in Case No. 201238965 by Lee Jackson, S.S. No. xxx-xx-4712.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

20120140334
04/03/2012 RP1 $16.00

ABSTRACT OF JUDGMENT

STATE OF TEXAS §
§
COUNTY OF HARRIS §

I, Richard Clark, attorney of record for CACH, LLC Judgment Plaintiff, certify that in Cause No. 985614, IN THE COUNTY CIVIL COURT AT LAW NUMBER THREE (3) of HARRIS County, Texas, wherein CACH, LLC is Plaintiff and LEE JACKSON is Defendant. Judgment Plaintiff recovered a judgment against LEE JACKSON, Judgment Defendant.

Judgment Plaintiff's mailing address is c/o The Law Office of Richard Clark, PLLC, 3030 S. Gessner Suite 200, Houston, Texas 77063.

Judgment Defendant's Address is 1302 HOUSTON AVE, PASADENA, TX 77502.

Judgment was rendered on December 08, 2011, in the amount of $3,582.71, attorney's fees in the amount of $1,182.29, and court costs in the amount of $ 293.86, plus interest in the amount of $0.00.

The interest rate on the judgment is 5.00% per year, from date of judgment until paid.

The judgment is entitled to the following credits: $ 0.00.

By: _____
Richard E. Clark,
State Bar No. 00785765
Attorneys for the Plaintiff,
CACH, LLC

BEFORE ME, the undersigned authority, on this 22 day of March, 2012, personally appeared Richard Clark, who swore an oath that the information in this abstract of judgment is true and correct.

JOSEPH DRAKE NICHOLS
MY COMMISSION EXPIRES
March 17, 2013

_____
Notary Public, State of Texas

AFTER RECORDING PLEASE RETURN TO:
RICHARD CLARK
3030 S. GESSNER SUITE 200
HOUSTON, TEXAS 77063

FILED FOR RECORD
8:00 AM

APR - 3 2012

Stan Stanart
County Clerk, Harris County, Texas

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.
THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas

APR - 3 2012

Stan Stanart
COUNTY CLERK
HARRIS COUNTY, TEXAS

CACH, LLC vs LEE JACKSON
120000780213

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 36

HCAD ID - 0141390000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5007 Wylie St, Houston,TX 77026 (Map ID 36, HCAD ID 0141390000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[69]				Property Ownership		Anticipated Filing Date[70]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[69] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[70] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Seven (7) in Block (1) one, of Finn Subdivision out of the Gagne Homestead, a subdivision I n Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Nancy Banda-Zuniga (Owner) with an address of 5006 Wylie, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24TH day of March, 2015.

By: Nancy Banda
Name: Nancy Graciela Banda

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Nancy Banda, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

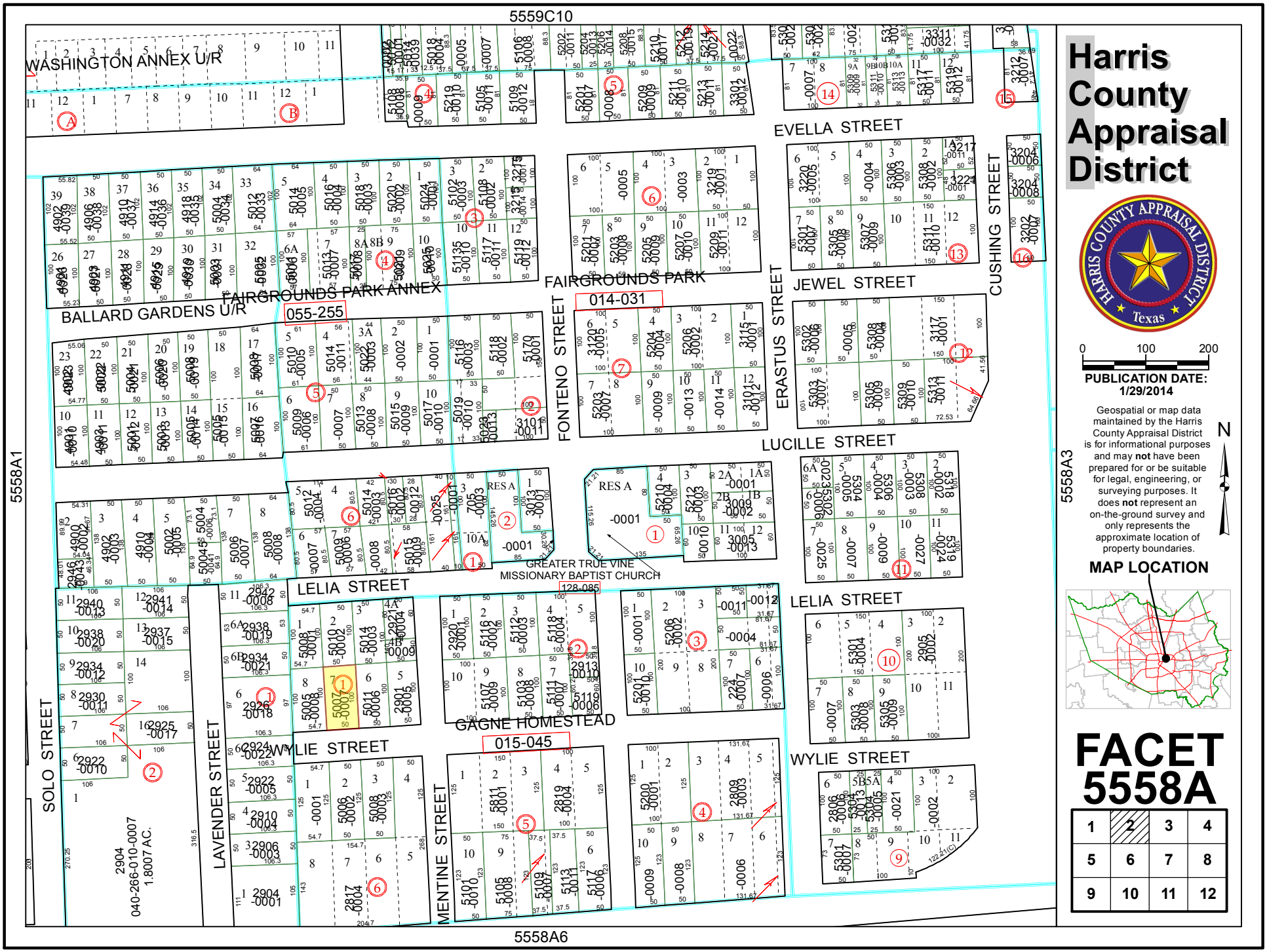
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9249
Date: December 13, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Andrew Jerry Johnson and Rebecca Johnson (by Warranty Deed filed for record under Volume 2581, Page 379 of the Deed Records of Harris County, Texas)

Property Description:

Lot Seven (7), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

1) Abstract of Judgment filed September 28, 2004, under Harris County Clerk's File No. X948892, styled Millennium Insurance Company, vs. Rebecca R. Johnson, in the principal amount of $6,954.00, plus cost, interest and attorney's fees.

2) Notice of child support Lien filed November 24, 1998, under Harris County Clerk's File No. T400263, against Andrew Johnson, in the principal amount of $16,555.00, plus costs and interest.

3) Notice of child support Lien filed December 12, 2002, under Harris County Clerk's File No. W283262, against Andrew Johnson, in the principal amount of $20,716.00, plus costs and interest.

4) Notice of child support Lien filed November 20, 2007, under Harris County Clerk's File No. 20070691000, against Andrew Johnson, in the principal amount of $33,184.00, plus costs and interest.

5) Notice of Federal Tax Lien filed February 22, 2011, under Harris County Clerk's File No. 20110072127, against Andrew Johnson, in the principal amount of $63,618.00.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 37

HCAD ID - 0141390000008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5005 Wylie St, Houston,TX 77026 (Map ID 37, HCAD ID 0141390000008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[71]				Property Ownership		Anticipated Filing Date[72]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[71] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[72] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Eight (8) in Block (1) one, of Finn Subdivision out of the Gagne Homestead a Subdivision, a subdivision In Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Monico Banda (Owner) with an address of 5005 Wylie, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24 day of March, 2015.

By: Monico Banda
Monico Banda

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Monico Banda, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

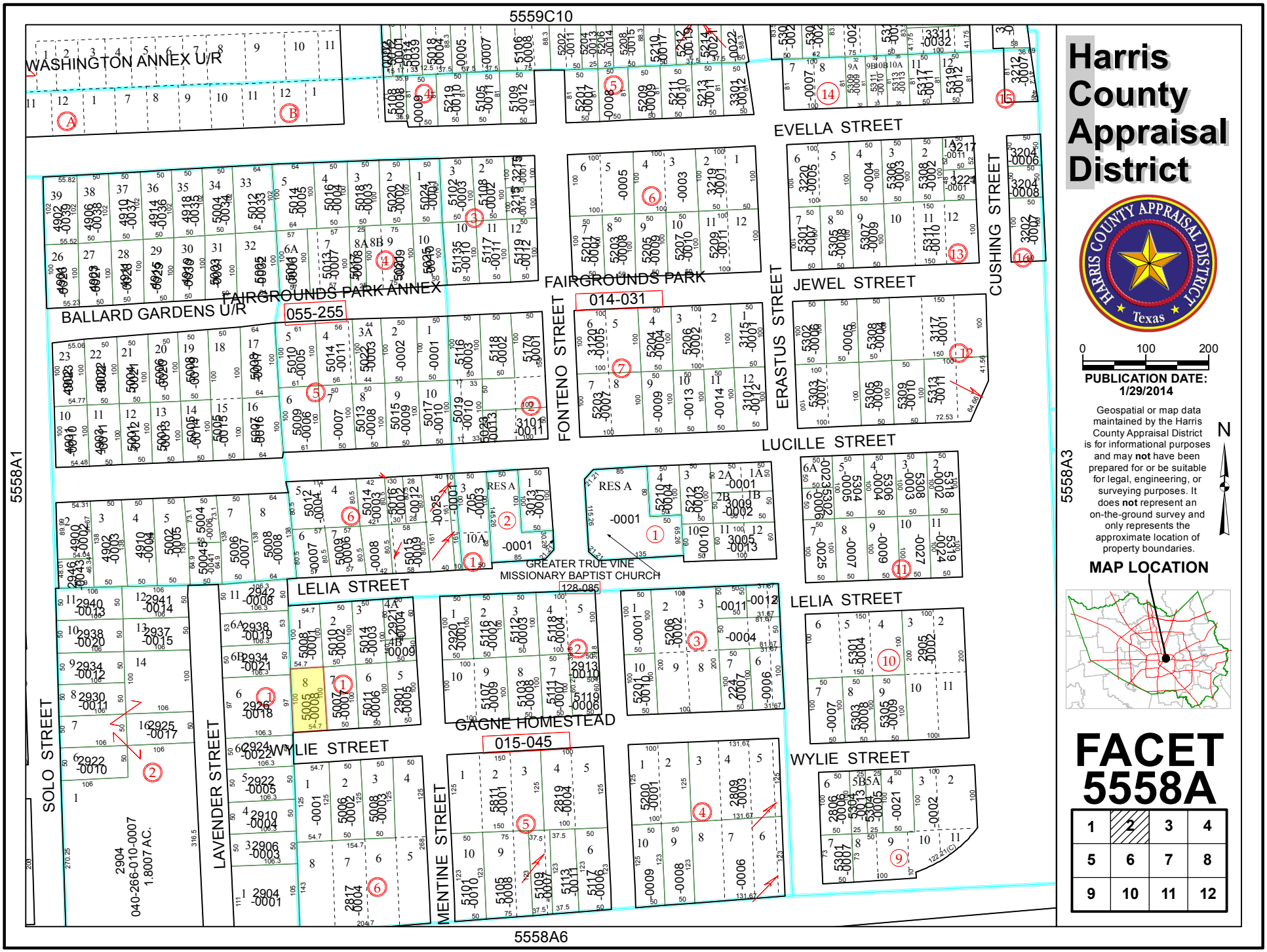
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
EVELLA STREET
FAIRGROUNDS PARK ANNEX
BALLARD GARDENS U/R
055-255
FAIRGROUNDS PARK
014-031
FONTENO STREET
ERASTUS STREET
JEWEL STREET
CUSHING STREET
LUCILLE STREET
LELIA STREET
GREATER TRUE VINE
MISSIONARY BAPTIST CHURCH
128-085
GAGNE HOMESTEAD
015-045
WYLIE STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE:
1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET
5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9250
Date: December 13, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Monico Duque Banda and Martha Zuniga Banda, husband and wife (by Warranty Deed filed for record under Harris County Clerk's File No. 20070330680)

Property Description: (Map ID# 37) (Tax ID# 014-139-000-0008)

Lot Eight (8), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 39

HCAD ID - 0402660100022

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2924 Lavender St, Houston,TX 77026 (Map ID 39, HCAD ID 0402660100022)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[75]				Property Ownership		Anticipated Filing Date[76]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[75] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[76] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Tract 6(six) in Block 1 (one), of the Liberty Road Estates, an addition in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leisa Glenn and heir and devisee of Lucille Long (Owner) with an address of 2924 Lavender, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 27th day of June, 2015.

By: _____
Name: Leisa Glenn

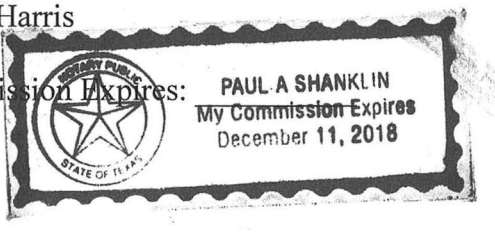
STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 27th day of June, 2015, personally appeared Leisa Glenn, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 27th day of June, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:



Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

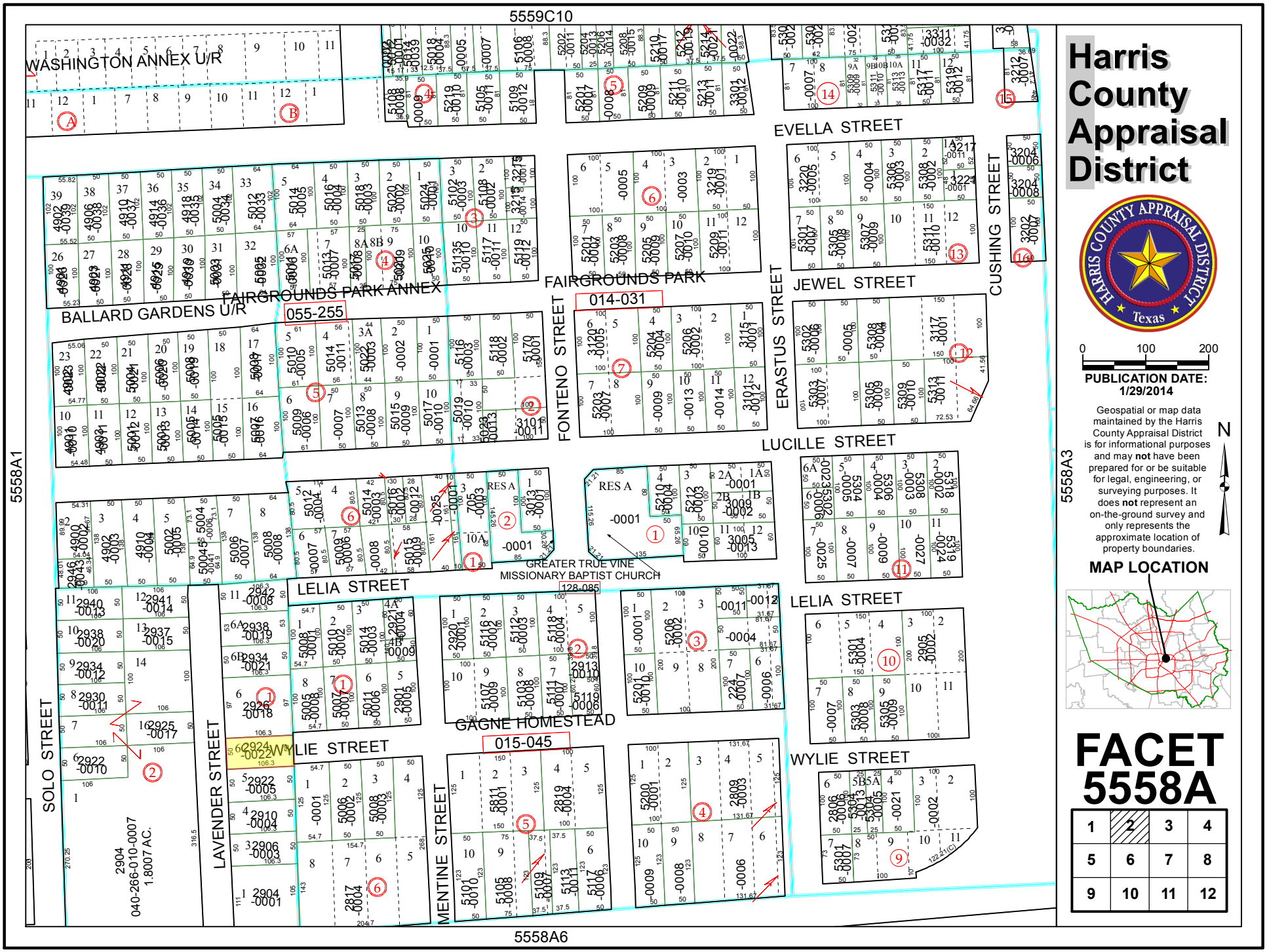
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0514
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Clark Investment Company (by Deeds filed for record under Volume 2034, Page 480 and Volume 2830, Page 252, both of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 39) (Tax ID# 040-266-010-0022)

Tract Six-C (6C), in Block One (1), of Liberty Road Estates, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lelia Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

Notes:

- Harris County Appraisal District describes the subject property as Tract 6C, however we find no conveyance describing same. According to the Appraisal Map, the subject property is comprised of Lot 6, in Block 1 of Liberty Road Estates, unrecorded.

- Harris County Appraisal District reflects Lucille Long as the current tax payer, however we find no conveyance out of Clark Investment Company or into Lucille Long.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 40

HCAD ID - 0402660100005

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2922 Lavender St, Houston,TX 77026 (Map ID 40, HCAD ID 0402660100005)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[77]				Property Ownership		Anticipated Filing Date[78]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[77] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[78] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 5, block 1 of Liberty Road Estates, an unrecorded subdivision out the Harris and Wilson Survey, Abstract No. 32, Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater Mount Nebo Baptist Church (Owner) with an address of 3819 Harland Dr., Houston, Texas77092. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater Mount Nebo Baptist Church
By: _____
Name: Charles L. Allen, Jr.
Title: Pastor

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 19th day of February, 2015, personally appeared Charles L. Allen, Jr., Pastor, of Greater Mount Nebo Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

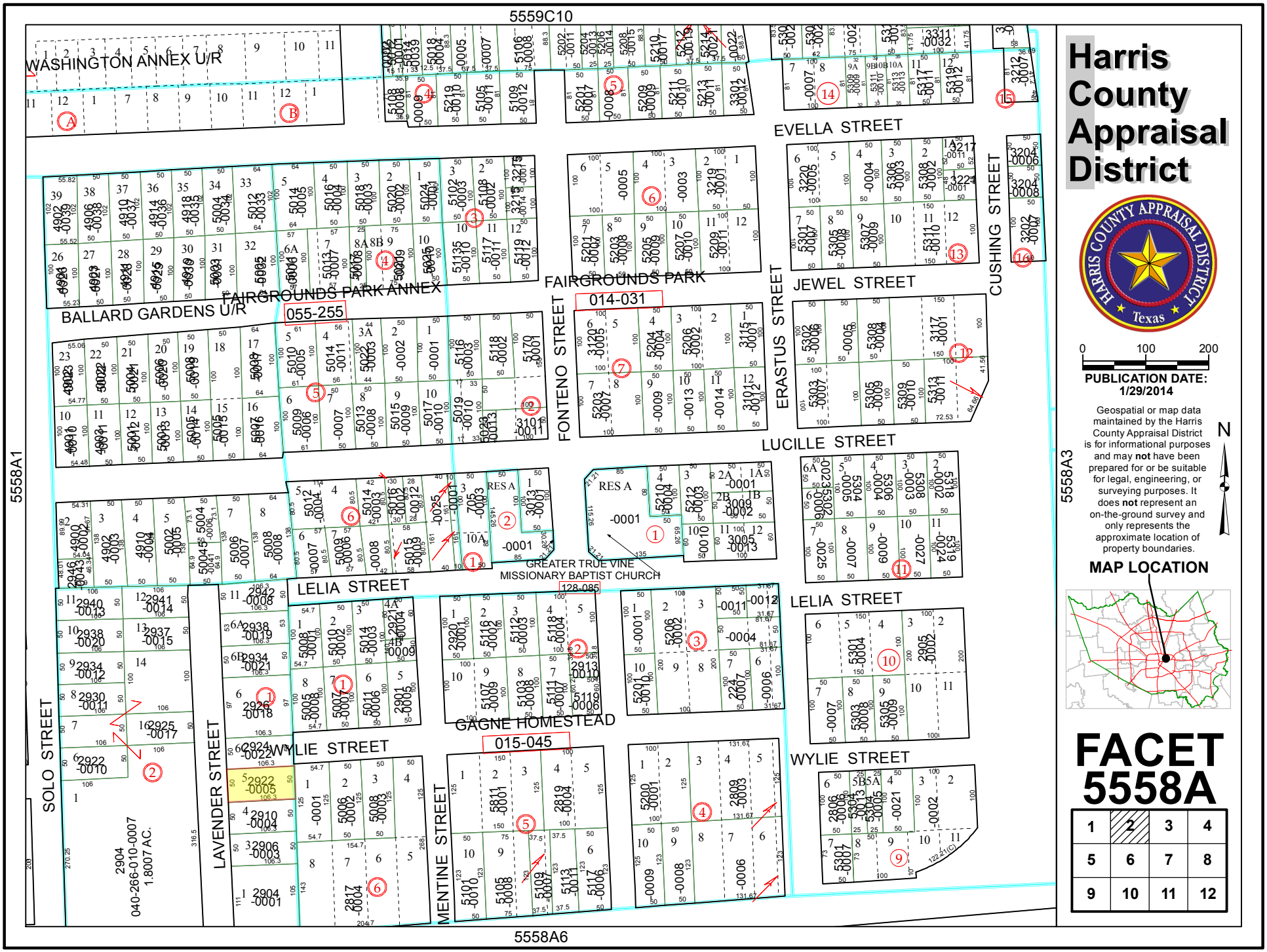
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0480
Date: January 22, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Greater Mt. Nebo Baptist Church (by Deed filed for record under Harris County Clerk's File No. 20110083443)

Property Description: (Map ID# 40) (Tax ID# 040-266-010-0005)

Lot Five (5), in Block One (1), of Liberty Road Estates, an unrecorded subdivision out of the Harris and Wilson Survey, Abstract No. 32, Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

Those as set forth by instrument(s) filed for record under Volume 1881, Page 268 of the Deed Records of Harris County, Texas.

Exceptions:

a) Building set-back line 20 feet in width along the front property line(s), as set forth by instrument(s) recorded in Volume 1881, Page 268 of the Deed Records of Harris County, Texas.

b) Building set-back line 3 feet in width along the side property line(s), as set forth by instrument(s) recorded in Volume 1881, Page 268 of the Deed Records of Harris County, Texas.

c) Utility easement 5 feet in width along the rear property line, as reserved by instrument(s) filed for record under Volume 1881, Page 268 of the Deed Records of Harris County, Texas.

d) Sidewalk easement 6.3 feet in width along the front property line, as reserved by instrument(s) filed for record under Volume 1881, Page 268 of the Deed Records of Harris County, Texas.

e) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 41

HCAD ID - 0141410000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5202 Lelia St, Houston,TX 77026 (Map ID 41, HCAD ID 0141410000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[79]				Property Ownership		Anticipated Filing Date[80]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[79] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[80] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

41

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 1 in Block 3 of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris county, Texas according to the map or plat thereof, recorded in Vol 1 Page 55 of map records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater True Vine Missionary Baptist Church (Owner) with an address of 5010 Fontinot, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this _____day of _____, 2015.

Greater True Vine Baptist Church
By: _____
Name: Matthew R. Alix Sr., Pastor

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Matthew R. Alix, Sr., Pastor, of Greater True Vine Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the _17th day of February, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

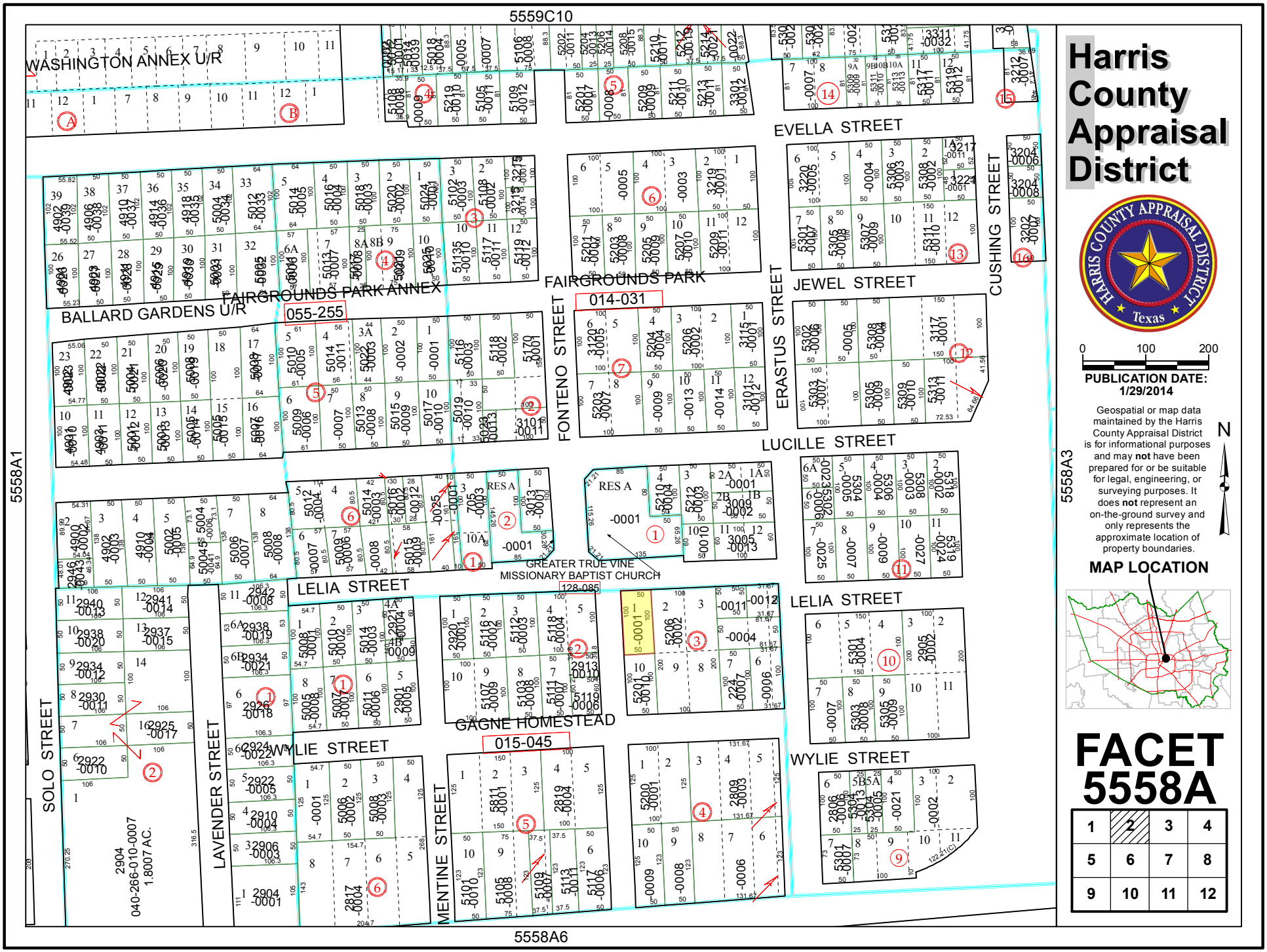
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
EVELLA STREET
FAIRGROUNDS PARK ANNEX
BALLARD GARDENS U/R
055-255
FAIRGROUNDS PARK
014-031
FONTENO STREET
ERASTUS STREET
JEWEL STREET
CUSHING STREET
LUCILLE STREET
LELIA STREET
GREATER TRUE VINE
MISSIONARY BAPTIST CHURCH
128-085
GAGNE HOMESTEAD
015-045
WYLIE STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE: 1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET 5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9446
Date: December 21, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 16th day of December, 2012, we find the following:

Title Vested In:

Greater True Vine Missionary Baptist Church (by Deed under Order of Sale in Tax Suits filed for record under Harris County Clerk's File No. 20100438179)

Property Description: (Map ID#41) (Tax ID# 014-141-000-0001)

Lot One (1), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 42

HCAD ID - 0140410000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2806 Erastus St, Houston,TX 77026 (Map ID 42, HCAD ID 0140410000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[81]				Property Ownership		Anticipated Filing Date[82]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[81] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[82] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Six (6) in Block (9) one, of Fairground Park a Subdivision, a subdivision I n Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Clara Scruggs (Owner) with an address of 5151 CR 181, Alvin, Texas 77511. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 7th day of April, 2015.

By: _____
Clara Scruggs

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Clara Scruggs, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 7th day of April, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-18

PAUL A SHERMAN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

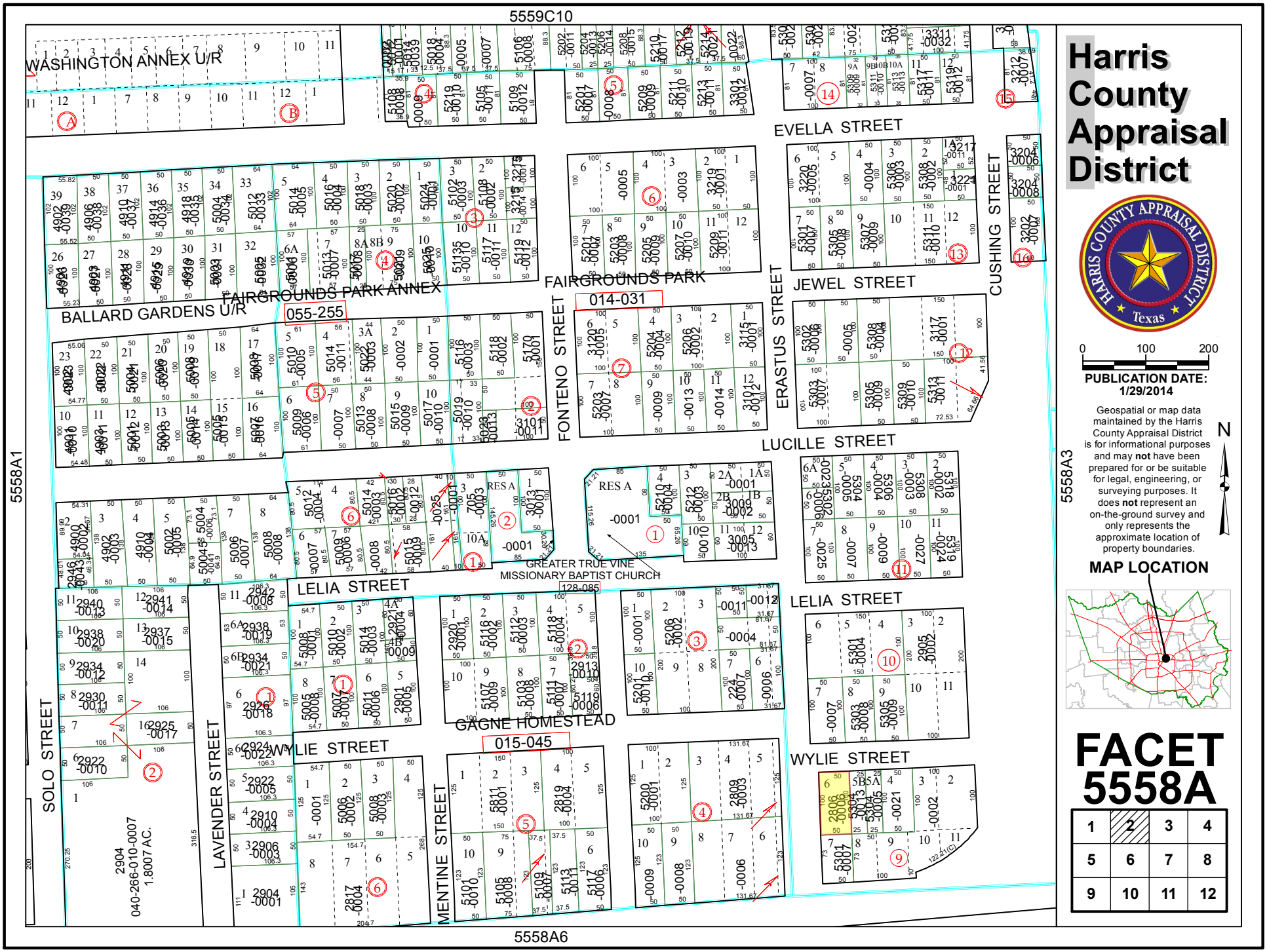
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
FAIRGROUNDS PARK ANNEX
BALLARD GARDENS U/R
055-255
FAIRGROUNDS PARK
014-031
EVELLA STREET
CUSHING STREET
FONTENO STREET
ERASTUS STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
GREATER TRUE VINE
MISSIONARY BAPTIST CHURCH
128-085
GAGNE HOMESTEAD
015-045
WYLIE STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE:
1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET
5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9065
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In:

Margaret Roberts, Clara Scruggs, Leroy Mock and Charles Mock (by Warranty Deed filed for record under Harris County Clerk's File No. U754245)

Property Description: (Map ID# 42) (Tax ID# 014-041-000-0006)

Lot Six (6), in Block Nine (9), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

1) We find reference to Cause No. 2011-14300, in the District Court of Harris County, Texas, styled Harris County, etal vs. Margaret Roberts, Clara Scruggs, Leroy Mock and Charles Mock. It is assumed that said cause of action is for delinquent taxes due on subject property. Said suit includes a Final Judgment dated December 13, 2011.

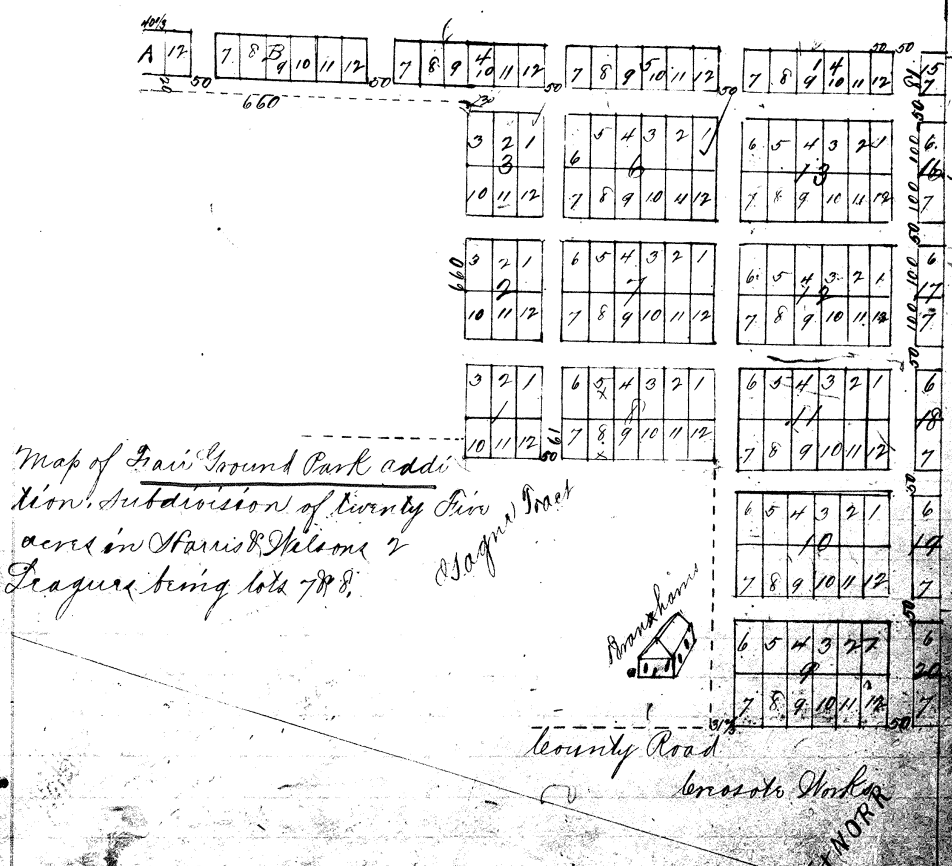
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

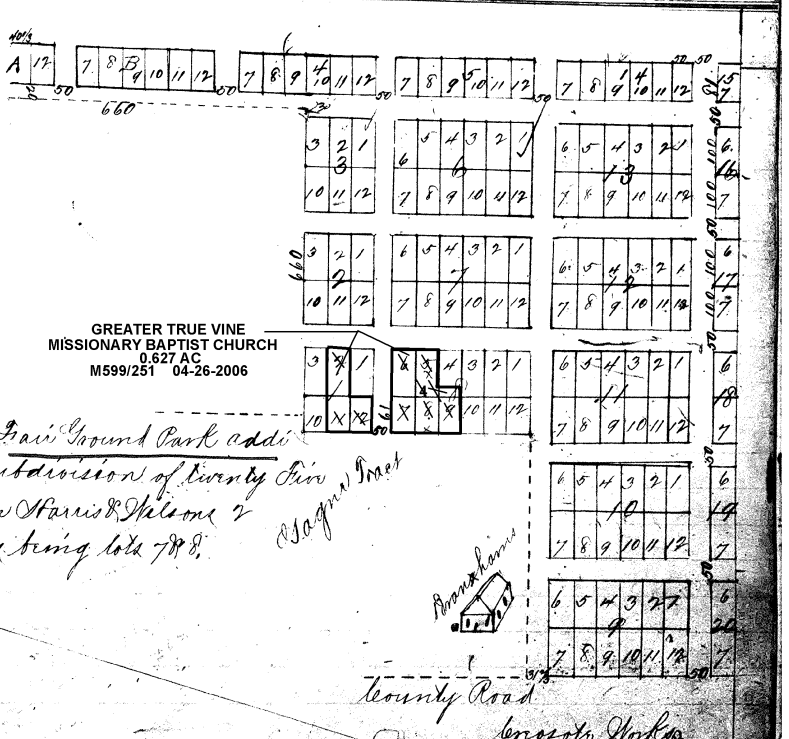
Texas American Title Company

Darrell Stone
Title Examiner



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the foregoing power of Attorney this 23rd day of January 1895 Henry Kline & Kline, The State of Texas County of Harris, Before me Alex. Hartlingick a Notary Public in and for Harris County State of Texas, on this day personally appeared Henry Kline and J. F. Kline Kline husband and wife, Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed, And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry F. Kline, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

VOL-81-460



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the forgoing power of Attorney this 23rd day of January 1895 Henry Kline & J. F. Kline, The State of Texas County of Harris. Before me Alex. Barthingick a Notary Public in and for Harris County State of Texas. On this day personally appeared Henry Kline and J. F. Kline his wife husband and wife. Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed. And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry Kline acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 43

HCAD ID - 0140410000013

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5304 Wylie St, Houston,TX 77026 (Map ID 43, HCAD ID 0140410000013)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[83]				Property Ownership		Anticipated Filing Date[84]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[83] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[84] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS	§
	§
COUNTY OF HARRIS	§

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The West One half (W-1/2) of Lot Five (5) in Block Nine (9), Of Fairground Park a Subdivision, a subdivision in Harris County, Texas, according to the Map or plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Irene Juarez (Owner) with an address of 5304 Wylie Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

By: Irene Juarez
Name: Irene Juarez

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Irene Juarez, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

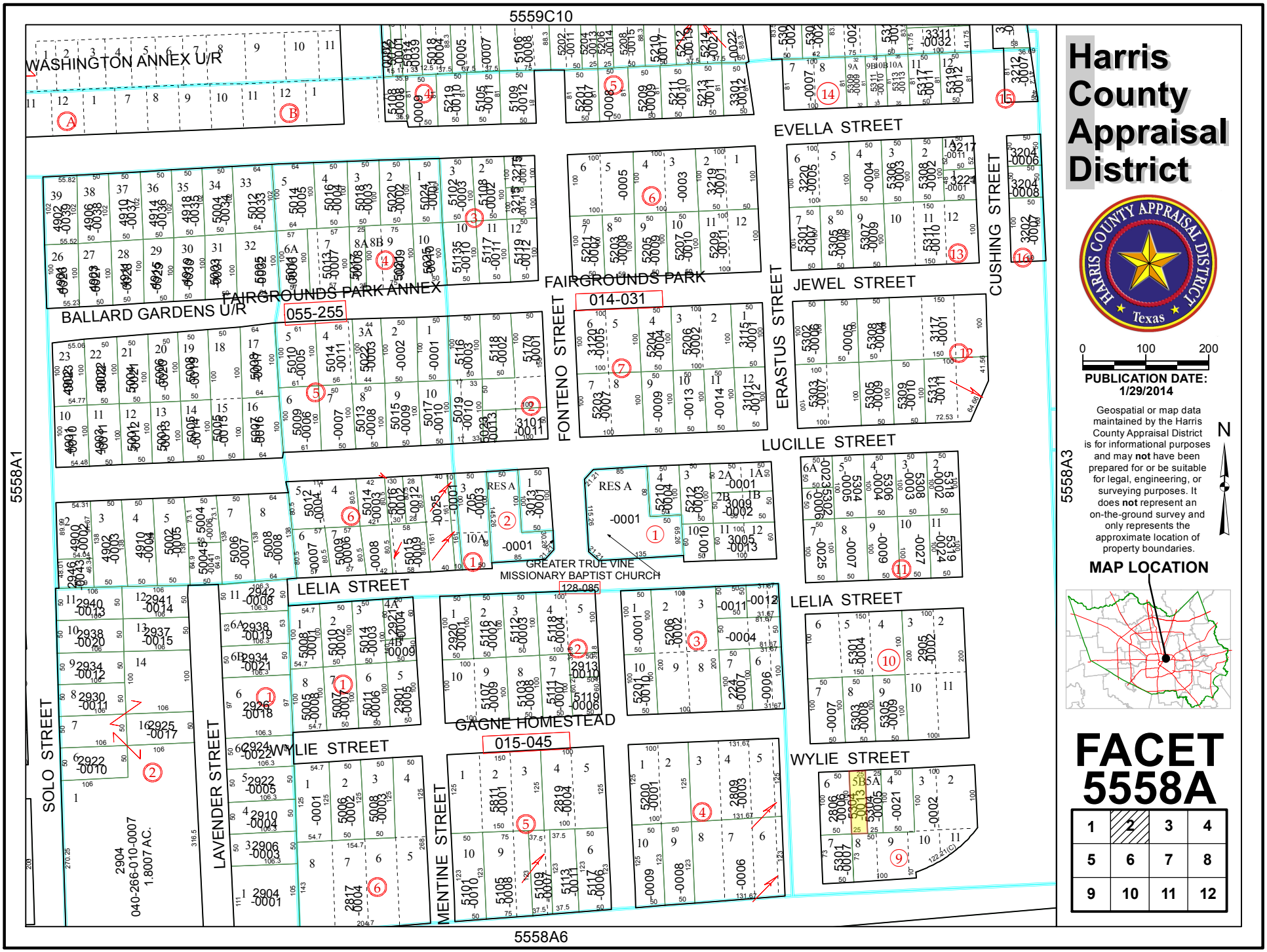
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9210
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In:

Irene Perez Juarez (by Warranty Deed filed for record under Harris County Clerk's File No. L292177)

Property Description: (Map ID# 43) (Tax ID# 014-041-000-0013)

The West One-half (W ½) of Lot Five (5), in Block Nine (9), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 461 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

1) Abstract of Judgment filed November 24, 2009, under Harris County Clerk's File No. 20090534997, styled Freddy's Auto Sales, vs. Irene Juarez, in the principal amount of $1,225.00, plus cost, interest and attorney's fees.

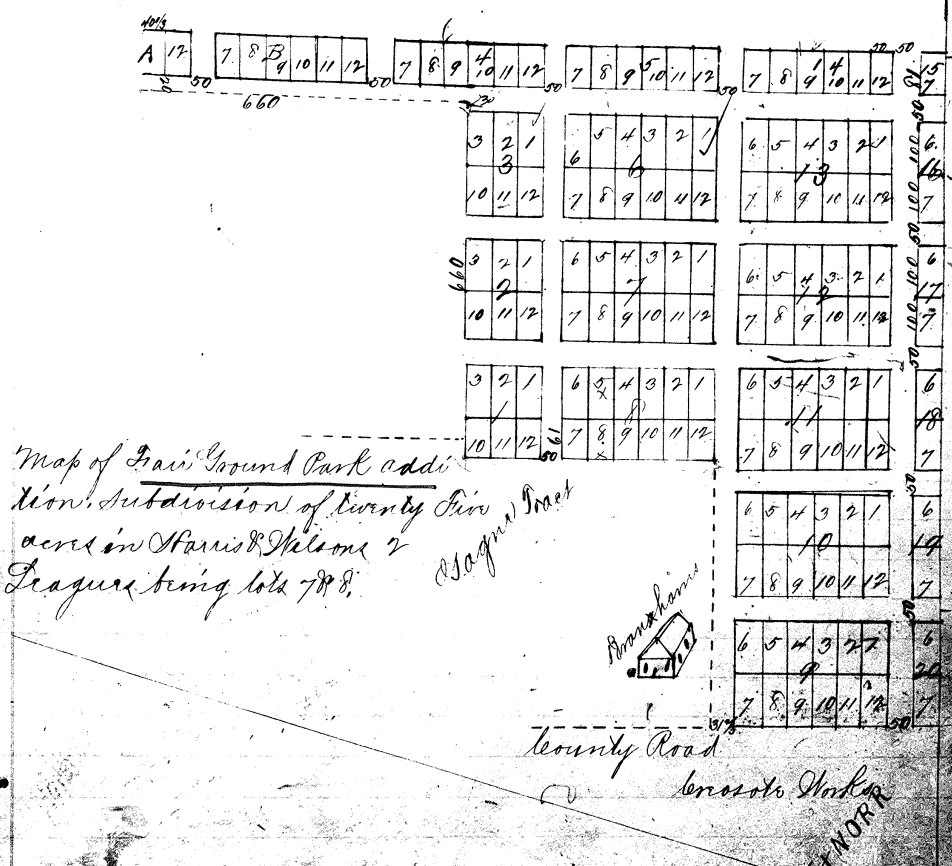
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

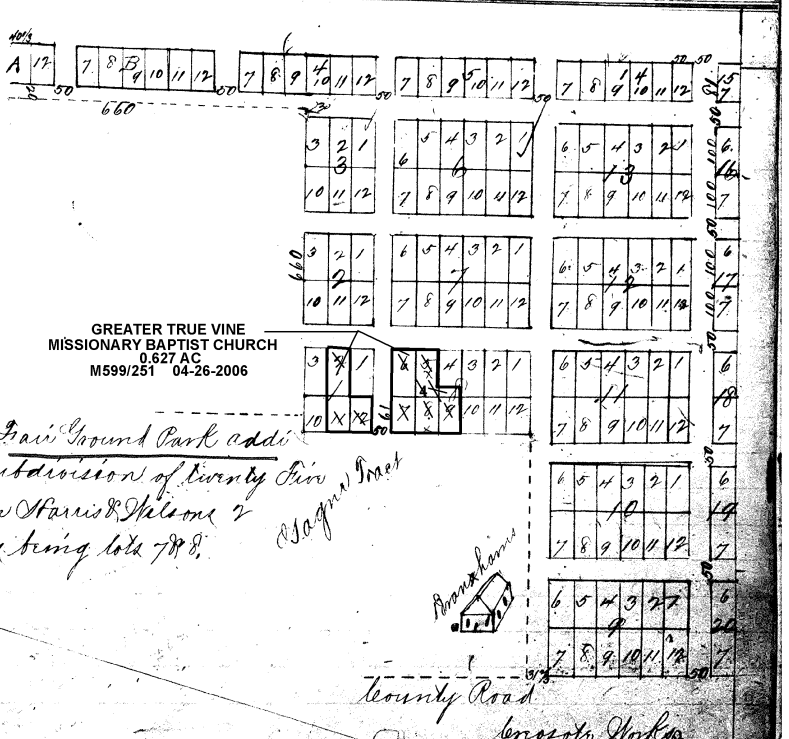
Texas American Title Company

Darrell Stone
Title Examiner



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the foregoing power of Attorney this 23rd day of January 1895 Henry Kline & Kline, The State of Texas County of Harris, Before me Alex. Hartlingick a Notary Public in and for Harris County State of Texas, on this day personally appeared Henry Kline and J. F. Kline Kline husband and wife, Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed, And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry F. Kline, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

VOL-81-460



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the forgoing power of Attorney this 23rd day of January 1895 Henry Kline & J. F. Kline, The State of Texas County of Harris. Before me Alex. Barthingick a Notary Public in and for Harris County State of Texas. On this day personally appeared Henry Kline and J. F. Kline his wife husband and wife. Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed. And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry Kline acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 44

HCAD ID - 0140410000005

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5304-1/2 Wylie St, Houston,TX 77026 (Map ID 44, HCAD ID 0140410000005)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[85]				Property Ownership		Anticipated Filing Date[86]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[85] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[86] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The East one half (E1/2) of Lot five Of Fairground Park Addition Subdivision, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Ernest I. Delgado heir and devisee of the estate of Susie Delgado with an address of 5304 ½ Wylie, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: _____
Name: Ernest I. Delgado

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Ernest I. Delgado, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

NOTARY PUBLIC STATE OF TEXAS
PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

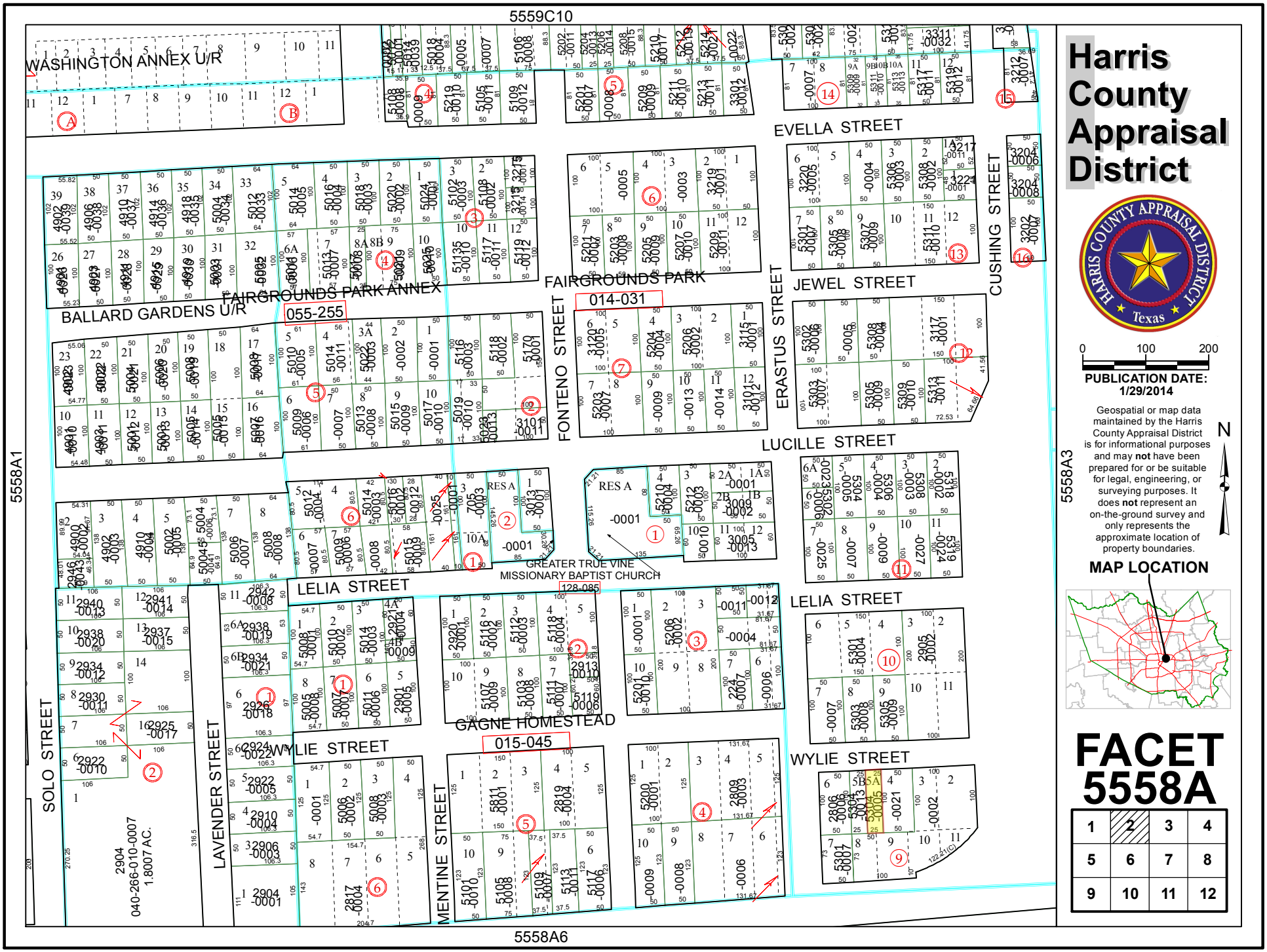
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9211
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In:

Saturnino P. Delgado and wife, Susie Delgado (by Warranty Deed filed for record under Harris County Clerk's File No. C769798)

Property Description: (Map ID# 44) (Tax ID# 014-041-000-0005)

The East One-half (E ½) of Lot Five (5), in Block Nine (9), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 461 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

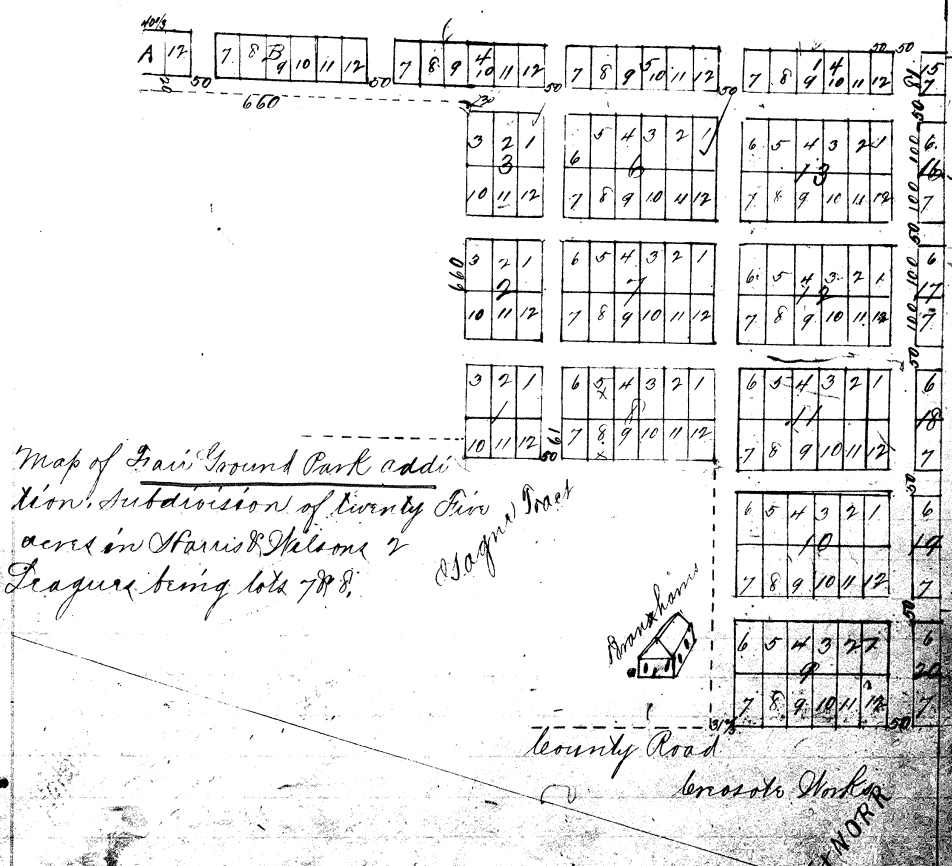
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

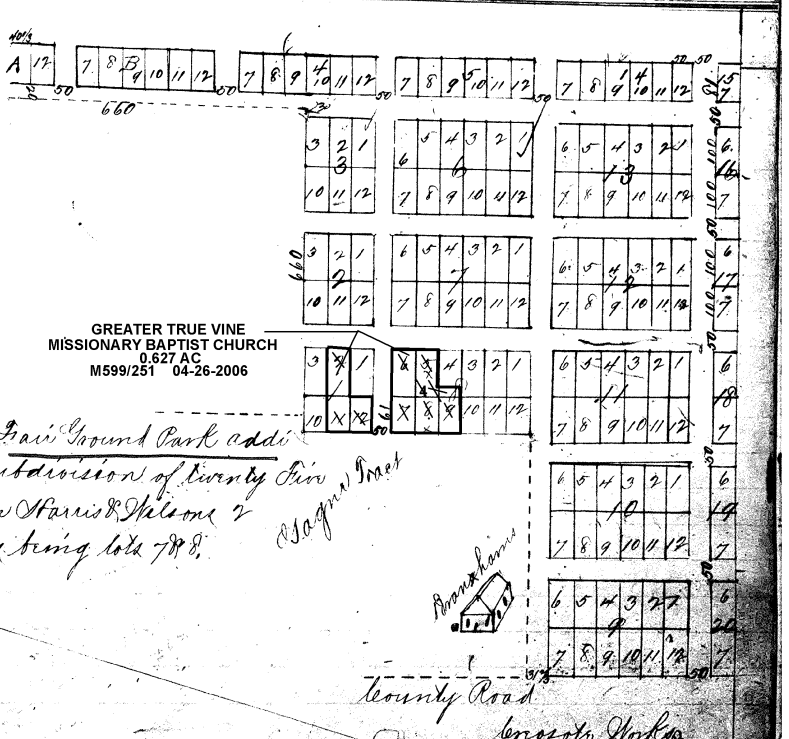
Texas American Title Company

Darrell Stone
Title Examiner



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the foregoing power of Attorney this 23rd day of January 1895 Henry Kline & Kline, The State of Texas County of Harris, Before me Alex. Hartlingick a Notary Public in and for Harris County State of Texas, on this day personally appeared Henry Kline and J. F. Kline Kline husband and wife, Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed, And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry F. Kline, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

VOL-81-460



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the forgoing power of Attorney this 23rd day of January 1895 Henry Kline & J. F. Kline, The State of Texas County of Harris. Before me Alex. Barthingick a Notary Public in and for Harris County State of Texas. On this day personally appeared Henry Kline and J. F. Kline his wife husband and wife. Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed. And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry Kline acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 45

HCAD ID - 0140330000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3013 Fontinot St, Houston,TX 77026 (Map ID 45, HCAD ID 0140330000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[87]				Property Ownership		Anticipated Filing Date[88]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[87] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[88] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot One (1), Block One (1) of Fairground Park Addition, a subdivision in Harris County, Texas according to the map and plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Lenora Young, heir and devisee of the estate of Emma Byrd with an address of 4719 Dabney Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 7TH day of ~~March~~ APRIL, 2015.

Lenora Young
Name: Lenora Young

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Lenora Young, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 7th day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

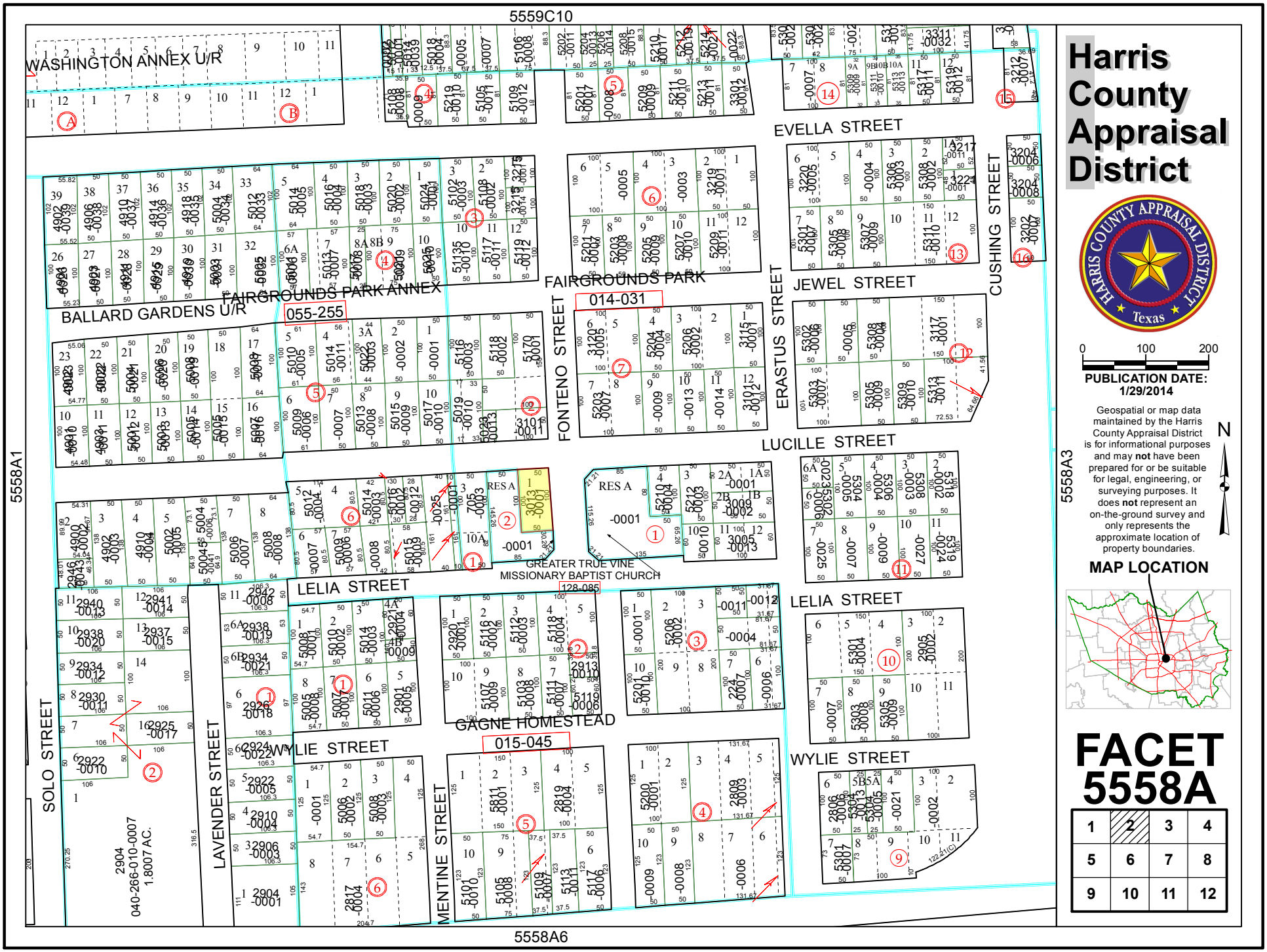
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0209
Date: January 12, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 7th day of January, 2013, we find the following:

Title Vested In:

Lenora Young and Clifton Scott (by Deeds filed for record under Harris County Clerk's File Nos. X203010, X203011, X203013, X203015 and 20070661643)

Property Description: (Map ID# 45) (Tax ID# 014-033-000-0001)

Lot One (1), in Block One (1), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on October 3, 1969, (topping project no. 212), filed under Harris County Clerk's File No. C994607, (Film Code No. 109-39-0842), executed by the City of Houston, showing portions of Fontenot Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 46

HCAD ID - 0140330000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **705 Lucille, Houston,TX 77026 (Map ID 46, HCAD ID 0140330000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[89]				Property Ownership		Anticipated Filing Date[90]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[89] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[90] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lots Three (3) and Ten (10), in Block One (1), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, page 460 of the Deed Records of Harris County, Texas.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Joyce Marie Taylor (Owner) with an address of 2530 Skyview, Houston, Texas 77047. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 10 day of March, 2015.

Name: Joyce Marie Taylor, Owner

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _ day of March, 2015, personally appeared Joyce Marie Taylor, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2015.

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

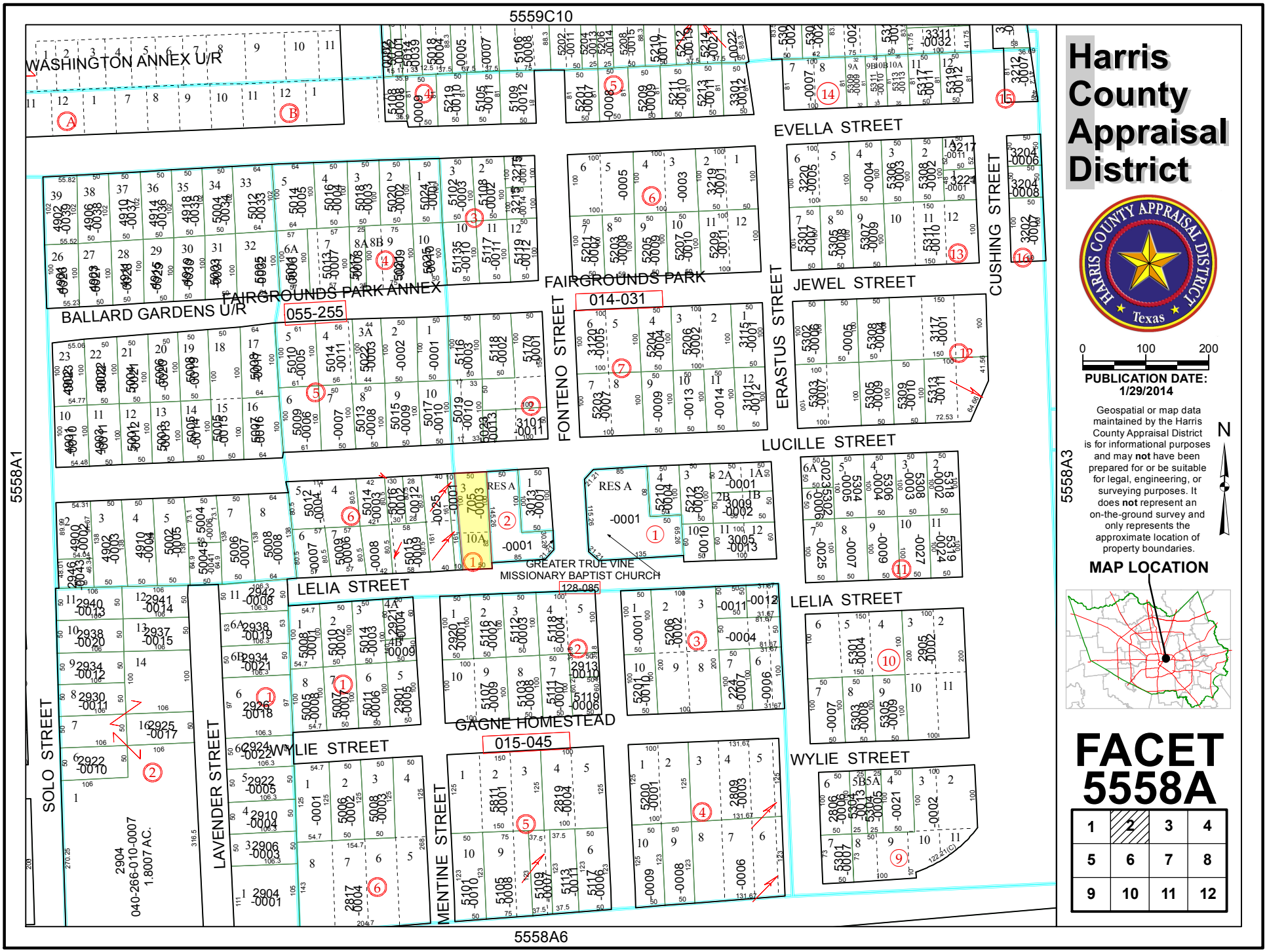
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
EVELLA STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
FONTENO STREET
ERASTUS STREET
CUSHING STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
055-255
014-031
128-085
015-045
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0
100
200
PUBLICATION DATE:
1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET
5558A
1
2
3
4
5
6
7
8
9
10
11
12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0269
Date: January 15, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 8th day of January, 2013, we find the following:

Title Vested In:

Joyce Marie Taylor (by Warranty Deed filed for record under Harris County Clerk's File No. 20120098168)

Property Description: (Map ID# 46) (Tax ID# 041-033-000-0003)

Lots Three (3) and Ten (10), in Block One (1), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on October 3, 1969, (topping project no. 212), filed under Harris County Clerk's file No. C994607, (Film Code No. 109-39-0842), executed by the City of Houston, showing portions of Lucille Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

2) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lelia Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 47

HCAD ID - 0140400000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3009 Erastus St, Houston,TX 77026 (Map ID 47, HCAD ID 0140400000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[91]				Property Ownership		Anticipated Filing Date[92]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[91] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[92] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The East eight feet of Lot Eight (8) and all of the adjoining lot Nine (9), in block Six (6), of Fairground Park Annex, a Subdivision, a subdivision In Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Mary Elizabeth Johnson-Crowley-Alex (Owner) with an address of 3009 Erastus, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24th day of March, 2015.

By: _____
Mary E. Johnson-Crowley

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Mary E. Johnson Crowley, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

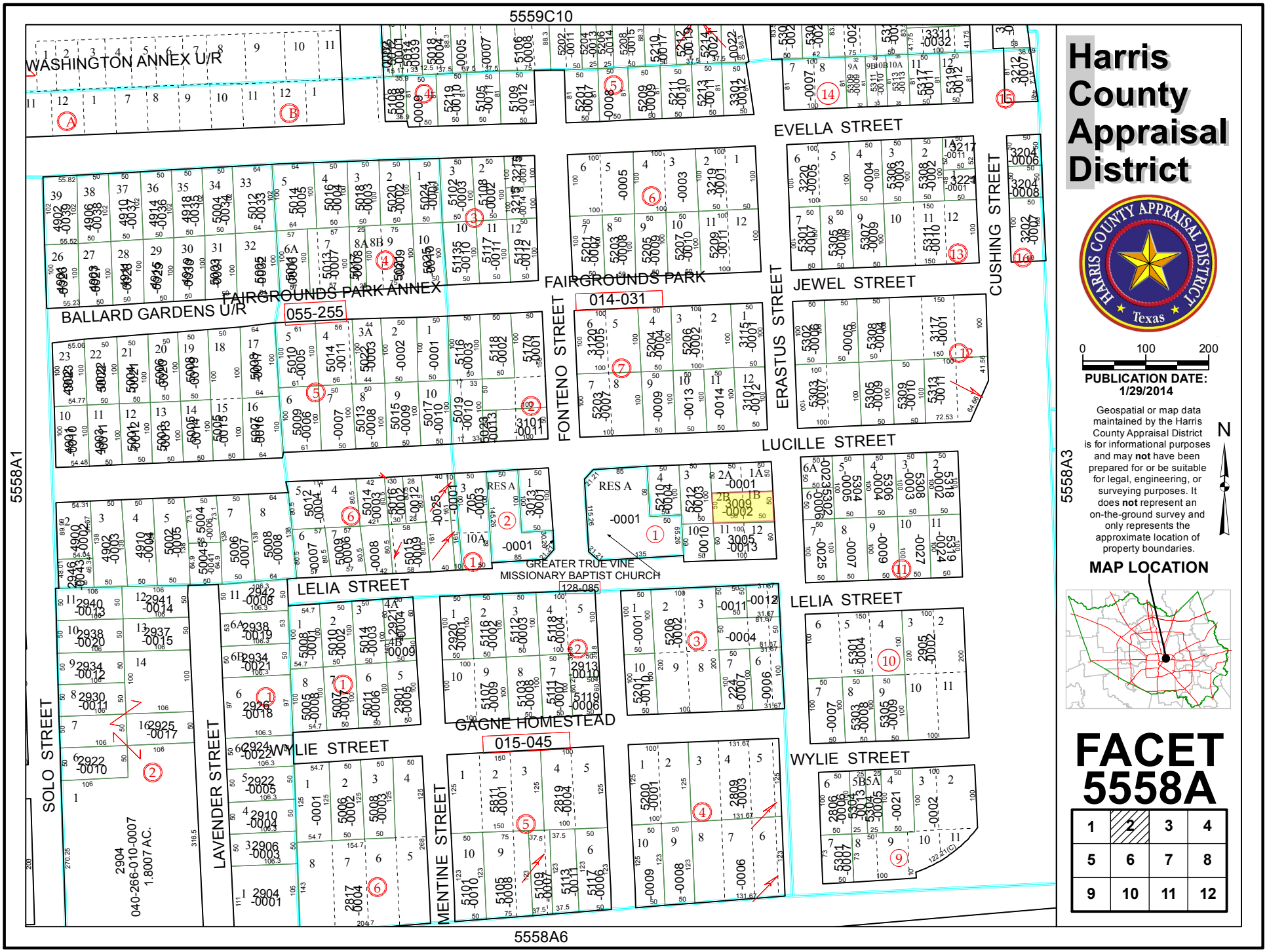
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0270
Date: January 15, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 8th day of January, 2013, we find the following:

Title Vested In:

Mary Elizabeth Crowley (by Deed filed for record under Volume 3790, Page 68 of the Deed Records and by Probate #80594, all of Harris County, Texas)

Property Description: (Map ID# 47) (Tax ID# 041-040-000-0002)

The South One-half (S ½) of Lots One (1) and Two (2), in Block Eight (8), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 28, 1966, (topping project no. 150), filed under Harris County Clerk's file No. C239838, (Film Code No. 046-23-1376), executed by the City of Houston, showing portions of Erastus Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 48

HCAD ID - 0140400000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5212 Lucille St, Houston,TX 77026 (Map ID 48, HCAD ID 0140400000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[93]				Property Ownership		Anticipated Filing Date[94]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[93] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[94] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Three (3), in Block Eight (8), Of Fairground Park Addition Subdivision, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Yolanda C. Ruiz with an address of 5212 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: Yolanda Ruiz
Name: Yolanda C. Ruiz ,

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Yolanda C. Ruiz, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

My [illegible] Expires
December [illegible] 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

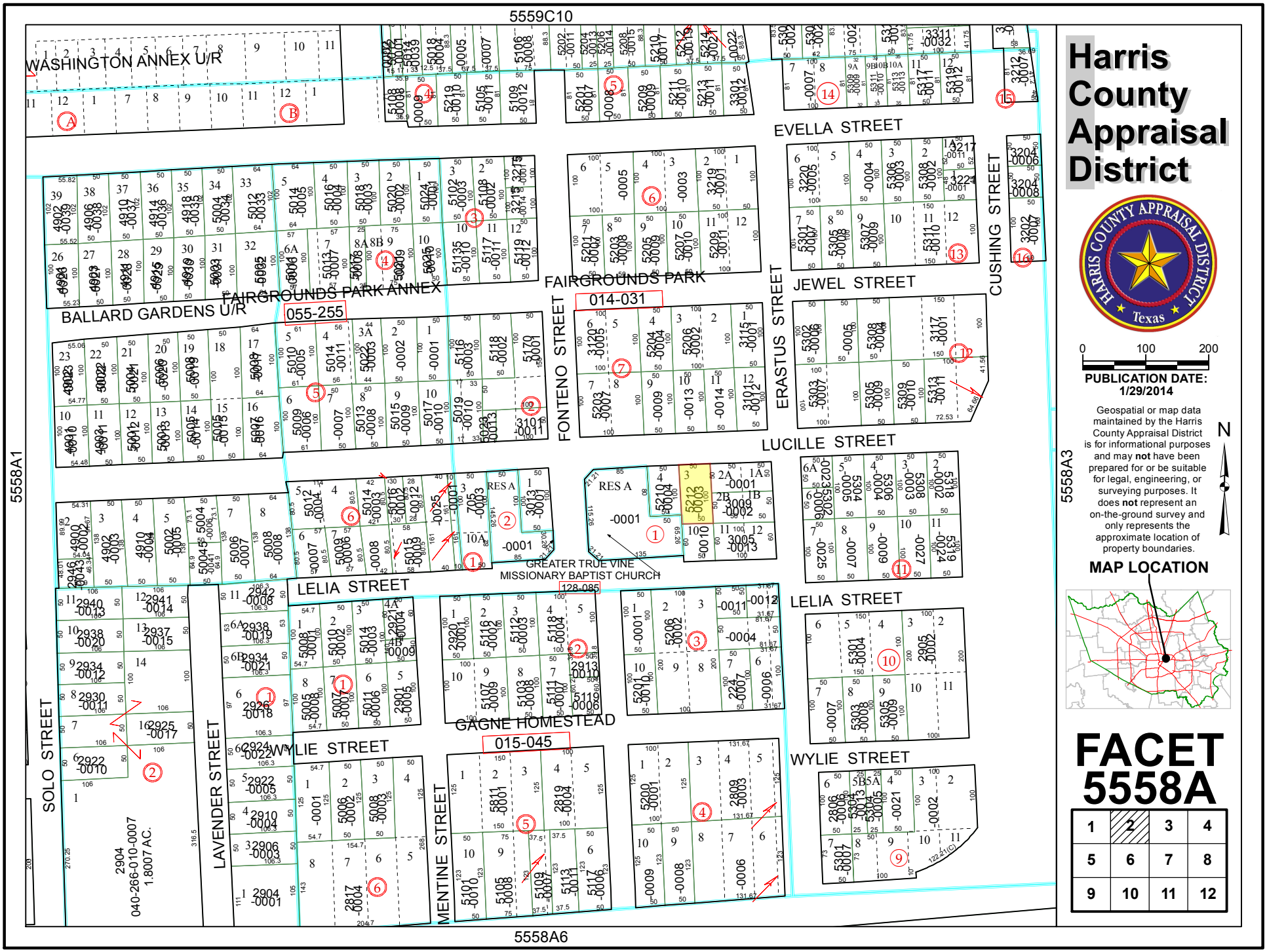
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0271
Date: January 15, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 8th day of January, 2013, we find the following:

Title Vested In:

Jose F. Ruiz and wife, Yolanda Ruiz (by Warranty Deed filed for record under Harris County Clerk's File No. T156666)

Property Description: (Map ID# 48) (Tax ID# 041-040-000-0003)

Lot Three (3), in Block Eight (8), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

The County Clerk's Records of Harris County, Texas, reveal numerous Abstracts of Judgment and/or State and Federal Tax Liens against persons with names similar to Jose F. Ruiz, record owner. They are as follows: Those as filed for record under Harris County Clerk's File Nos. W238818, W392425, W491662, Z412451, 20100325780, 20070102504, 20080219234 and 20110529858.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 49

HCAD ID - 0140400000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5210 Lucille St, Houston,TX 77026 (Map ID 49, HCAD ID 0140400000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[95]				Property Ownership		Anticipated Filing Date[96]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[95] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[96] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Four (4), Block Eight (8), Of Fairground Park Addition, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Dorothy Hagan Randle, as heir and devisee of the Estate of Aaron Hagan with an address of 7410 Ave A, Beasley, Texas 77417. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: ~~_____~~ Dorothy Hagan Randle
Name: Dorothy Hagan Randle

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Dorothy Hagan Randle, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

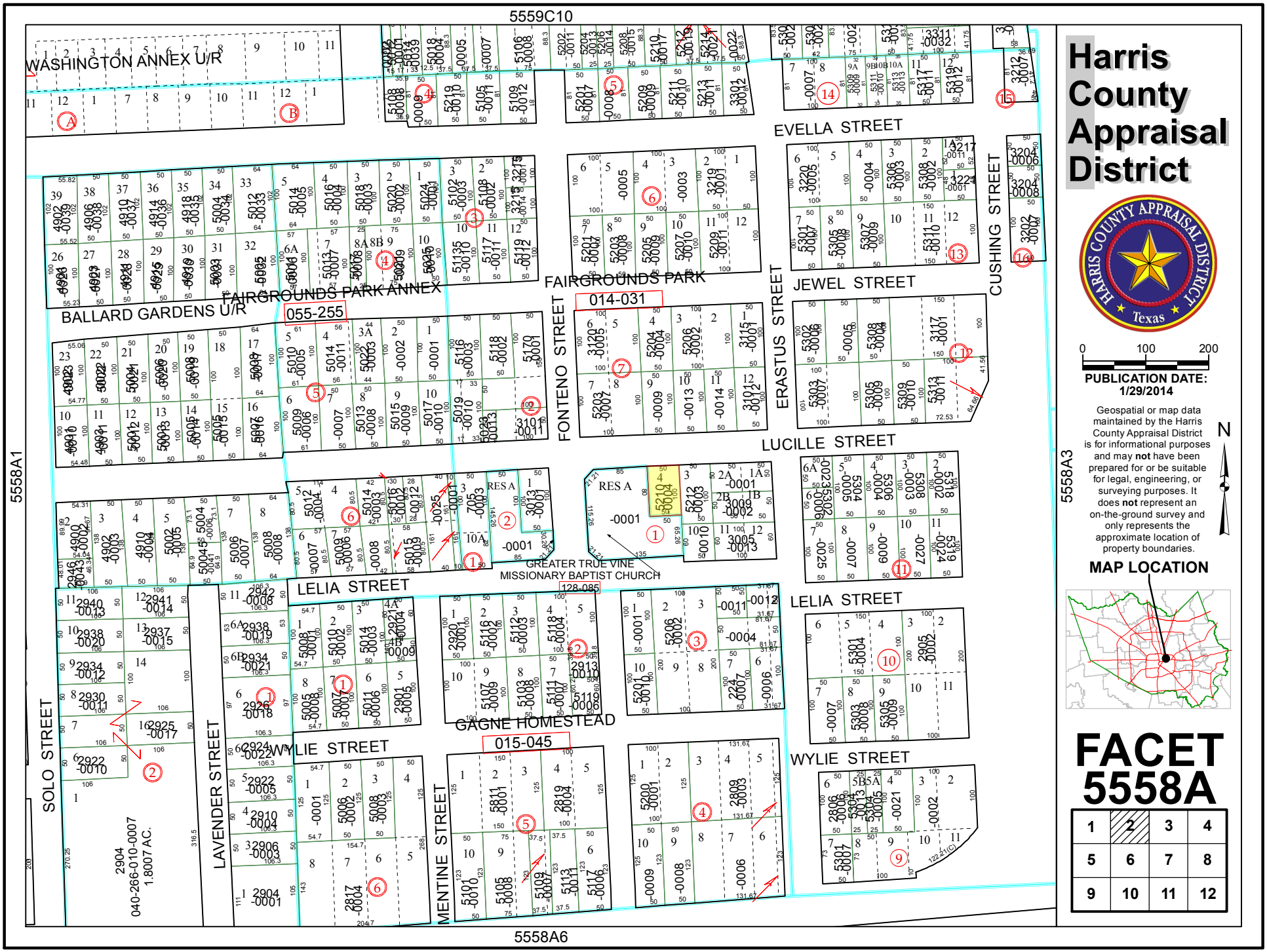
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0272
Date: January 15, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 8th day of January, 2013, we find the following:

Title Vested In:

The Heirs and Devisees of the Estate of Aaron Hagan, deceased (by Deed filed for record under Volume 1344, Page 309 of the Deed Records of Harris County, Texas and by Affidavit of Heirship filed for record under Volume 3499, Page 92 of the Deed Records of Harris County Texas) (See notes)

Property Description: (Map ID# 49) (Tax ID# 041-040-000-0004)

Lot Four (4), in Block Eight (8), of Fairground Park Addition, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) We find reference to Cause No. 2012-39307, in the District Court of Harris County, Texas, styled Harris County, et al vs. Dorothy Mae Hagan, et al. It is assumed that said cause of action is for delinquent taxes due on subject property.

Involuntary Liens:

None of record.

Notes:

- The most recent Deed of record is dated December 22, 1944 and filed under Volume 1344, Page 309 of the Deed Records of Harris County, Texas which conveyed the subject property to Elizabeth Franklin.
- We subsequently find of record an Affidavit of Heirship pertaining to the Estate of Elizabeth Franklin Silas filed for record under Volume 3499, Page 92 of the Deed Records of Harris County, Texas, wherein Chaney Hagan and Aaron Hagan are designated as heirs.
- Chaney Hagan is deceased as reflected by Harris County Probate #65252 dated October 2, 1958. Title therein vested in surviving spouse, Aaron Hagan.
- We find no heirship proceedings of record regarding the Estate of Aaron Hagan, deceased.
- We then find of record a Deed of Trust executed by Hubert Randle and Dorothy Mae Randle as purported owners of the subject property, filed for record under Harris County Clerk's File No. B382310. However, we find no Deed of record into or out of Hubert Randle and Dorothy Mae Randle.
- The Harris County Appraisal District reflects Alfred B. and Freddie Randolph as taxpayers of the subject property. However, we find no Deed of record into or out of Alfred B. and Freddie Randolph.
- We do find of record an Application to Declare Heirship of Alfred B. Randolph under Cause #379062 of the Harris County Probate Records. However, said proceedings have not been finalized.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

mc etc B382310

FILM CODE 8-24-61 00044 B382310 LS A PD 210 2.50

Contract for Labor and Materials and Trust Deed

057-08-1304

CONTRACT RECORDS

2or

This CONTRACT made and entered into by and between Hubert Randle VOL 1367 PAGE 387

and his wife Dorothy Mae Randle of Harris County, Texas, hereinafter called OWNERS,

and A - 1 Construction of Houston, Texas, hereinafter called CONTRACTOR,

WITNESSETH: That Contractor, for the considerations herein stated, agrees and contracts with the Owners to furnish, and pay for, all labor and materials needed to construct in a good and workmanlike manner, the following improvements:

prepare for alum siding, caulk and seal, alum stripping, stone wainscot high, in front of house, alum screens, and 2 alum screen doors.

upon the following described tract, lot or parcel of land belonging to Owners:

250 G

Lot 4 - Block 8 - of Fairgrounds Park Addition to the City of Houston, Harris County, Texas

In consideration of the foregoing, Owners promise and agree to pay Contractor, his heirs, representatives or assigns, the sum of

Thirty one hundred sixty and 50/100 Dollars ($ 3160.50)

payable as follows: $ cash upon the execution of this contract, and the balance of $ 3160.50 shall be evidenced by a note for that amount to be executed and delivered upon the completion of the improvements above described. Said note shall be payable to the order of the Contractor, [illegible], Houston, Texas, in 60 equal successive monthly installments of $ 52.68 each, except the final installment, which shall be the balance then due on the note.

To secure the payment of said note, Owners hereby give, grant and convey to Contractor, his heirs, or assigns, an express mechanic's and materialman's lien as provided by the Constitution and Laws of the State of Texas, upon the hereinbefore described property. Said Owners, to additionally secure and enforce the payment of said note and in consideration of the premises hereinbefore set forth, have granted, bargained and sold and by these presents do grant, bargain and sell unto

E. B. Yeager as Trustee, and to his successors in this trust, all the hereinbefore described property and improvements. To have and to hold the said property unto the said Trustee or his successor forever upon the following terms and conditions: That if the Owners shall pay off and discharge said note according to its tenor and effect, then this conveyance shall become null and void and shall be released by the holder of the indebtedness; but should Owners default in the payment of said note, or fail to pay, before they become delinquent, all taxes legally assessed against said property, or fail to keep said property fully insured against fire and other hazards, the holder of said note may, at his option, declare the entire remaining unpaid balance of said note immediately due, and, if not immediately paid, then and in that event the Trustee or his successor is hereby authorized and empowered to sell said property in accordance with the Laws of The State of Texas. If the Owners or those holding under them shall remain in possession of said property after sale, however made, such Owners or those holding under them shall become the tenants at sufferance of the purchaser. In the event of the death or the failure of the Trustee herein to act, then the legal holder of said indebtedness may appoint in writing a substitute Trustee who shall succeed to all the rights and powers heretofore granted to the Trustee herein. Owners hereby acknowledge that this contract is being executed and delivered before any labor or materials for the erection and construction of said improvements have been furnished.

In the event any portion of the indebtedness evidenced by the above described note is not, for any reason, secured by this deed of trust on the above described property, it is expressly stipulated, provided and agreed that the full amount of all payments hereafter made upon said note shall be first applied to such unsecured portion of said indebtedness until the same has been fully paid.

WITNESS OUR HANDS this 7 day of August, 19 61

A-1 Construction Co
Contractor

By Stan Lewis
Title

Hubert Randle

Dorothy Mae Randle
Owners

STATE OF TEXAS
COUNTY OF

ACKNOWLEDGMENT

Before me, the undersigned authority, on this day personally appeared Hubert Randle and Dorothy Mae Randle, his wife, known to me to be the persons whose names are subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed. And the said Dorothy Mae Randle wife of the said Hubert Randle having been examined by me privily and apart from her husband, and having the same fully explained to her, she, the said Dorothy Mae Randle acknowledged such instrument to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

Given under my hand and seal of office, this 7 day of August, 19 61

Notary Public in and for Harris County, Texas

5m 240 D7)

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 52

HCAD ID - 0140420000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5301 Lelia St, Houston,TX 77026 (Map ID 52, HCAD ID 0140420000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[1]				Property Ownership		Anticipated Filing Date[2]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[1] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[2] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lots Four (4), Five (5) and Six (6) in Block (10), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is AMBE SAI LLC, a Texas limited liability compnay (Owner) with an address of 5301 Lelia, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 7th day of April, 2015.

By: Nitin Ghutaclaria
Name: Nitin Ghutaclaria
Title: Owner and Registered agent of Ambe Sai, LLC.

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Nitin Ghutaclaria , known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 7th day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

LISA SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

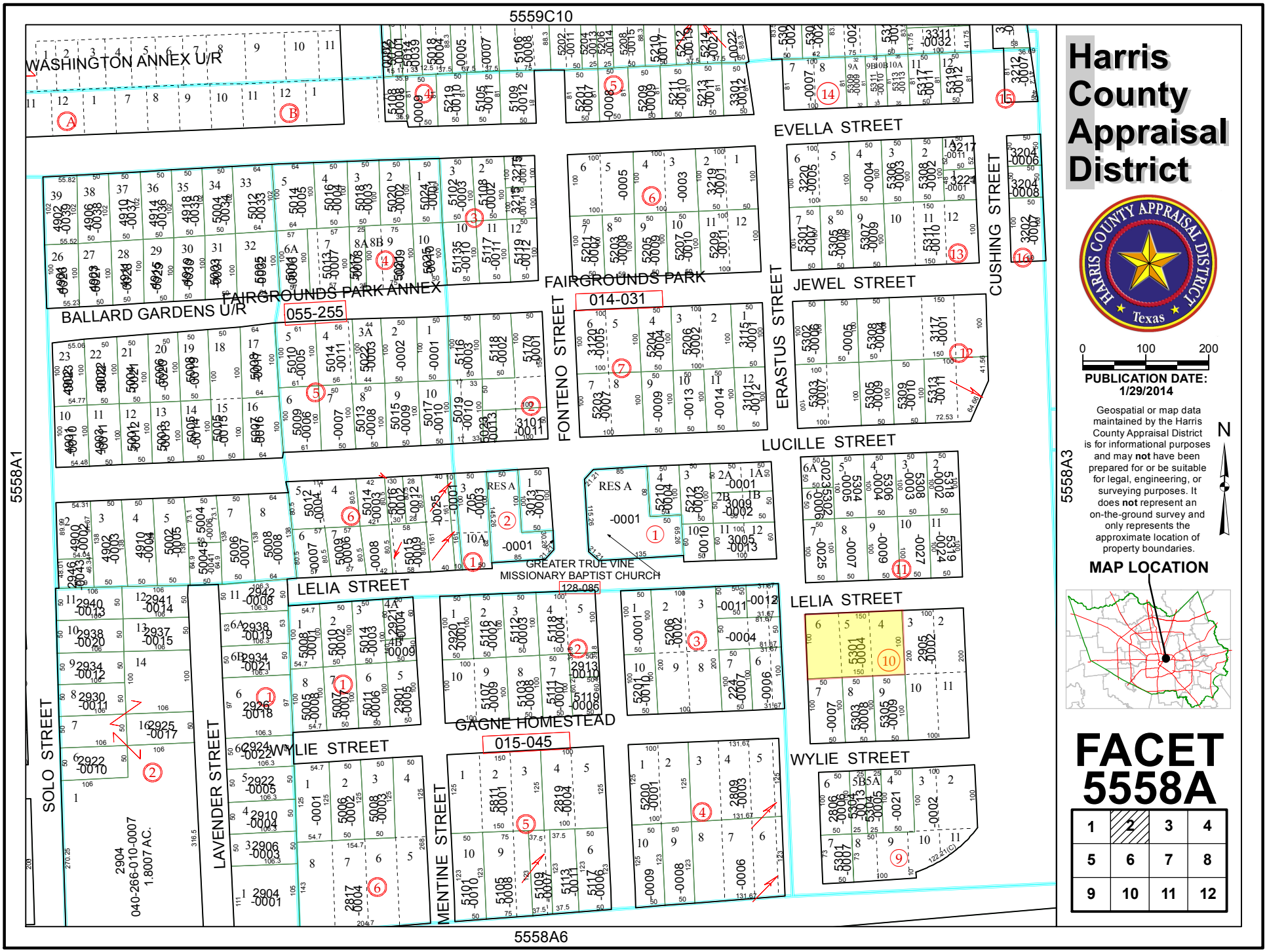
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9217
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In:

AMBE SAI, LLC, a Texas limited liability company (by Warranty Deed filed for record under Harris County Clerk's File No. 20110409829)

Property Description: (Map ID# 52) (Tax ID# 014-042-000-0004)

Lots Four (4), Five (5) and Six (6), in Block Ten (10), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) A Vendor's Lien was retained in Deed dated September 8, 2011, filed for record on September 14, 2011, under Harris County Clerk's File No. 20110387245, executed by Mukesha Patel and Mahendra Patel, a/k/a Mahendra Patidar, to Nitin Ghutadaria, securing one certain promissory note of even date therewith in the principal amount of $500,000.00, payable to the order of Mukesha Patel and Mahendra Patel; said note and lien being additionally secured by Deed of Trust of even date therewith, in favor of Erwin Wilbanks, as Trustee, together with all terms, conditions and stipulations contained therein, including any additional indebtedness secured thereby, filed for record on September 14, 2011, under Harris County Clerk's File No. 20110387246.

2) Deed of Trust to Secure Assumption dated September 20, 2011, recorded September 29, 2011, in Harris County, Texas, under Clerk's File No. 20110409830, executed by AMBE SAI, LLC., to Robert M. Crain, Trustee, for the benefit of Nitin Ghutadaria, and additionally secured by Vendor's Lien in Deed dated September 20, 2011, recorded under Harris County Clerk's File No. 20110409829, from Nitin Ghutadaria to AMBE SAI, LLC.

Involuntary Liens:

None of record.

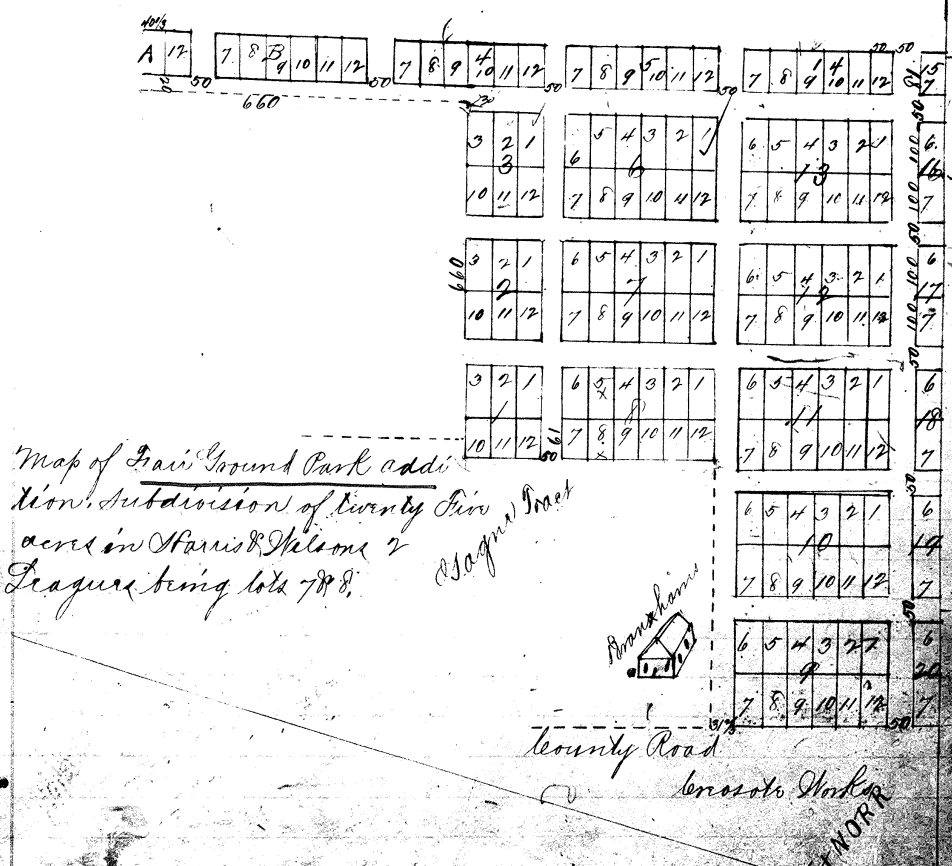
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

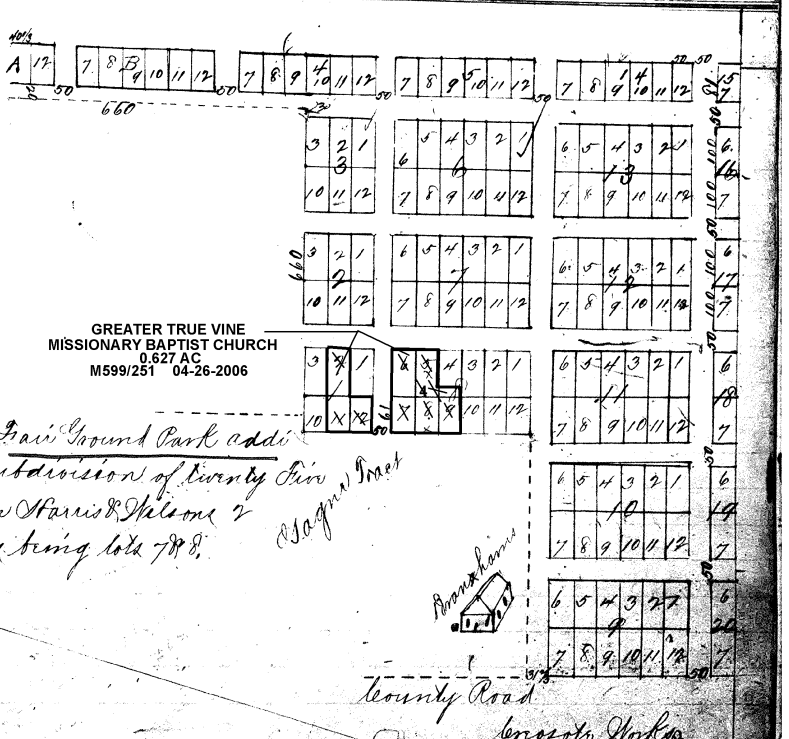
Texas American Title Company

Darrell Stone
Title Examiner



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the foregoing power of Attorney this 23rd day of January 1895 Henry Kline & Kline, The State of Texas County of Harris, Before me Alex. Hartlingick a Notary Public in and for Harris County State of Texas, on this day personally appeared Henry Kline and J. F. Kline Kline husband and wife, Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed, And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry F. Kline, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

VOL-81-460



Witness my hand at Houston Texas this 23rd day of January 1895. I have authorized the forgoing power of Attorney this 23rd day of January 1895 Henry Kline & J. F. Kline, The State of Texas County of Harris. Before me Alex. Barthingick a Notary Public in and for Harris County State of Texas. On this day personally appeared Henry Kline and J. F. Kline his wife husband and wife. Known to me to be the persons whose names are subscribed to the foregoing instrument and severally acknowledged to me that they executed the same for the purposes and considerations therein expressed. And the said Mrs J. F. Kline, the wife of the said Henry Kline, having been examined by me privily and apart from her said husband, and having the same fully explained to her she the said Mrs J. F. Kline, the wife of the said Henry Kline acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and considerations therein expressed and that she did not wish to retract it. Given

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 55

HCAD ID - 0140420000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5305 Wylie St, Houston,TX 77026 (Map ID 55, HCAD ID 0140420000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[7]				Property Ownership		Anticipated Filing Date[8]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[7] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[8] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Nine (9), in Block Ten (10), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Victor D. Ibarra and Carol Ibarra (Owner) with an address of 5305 Wylie, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 7th day of April, 2015.

By: Carol Ann Ibarra
Name: Carol Ibarra

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Carol Ibarra, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 7th day of April, 2015.

NOTARY PUBLIC STATE OF TEXAS
PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

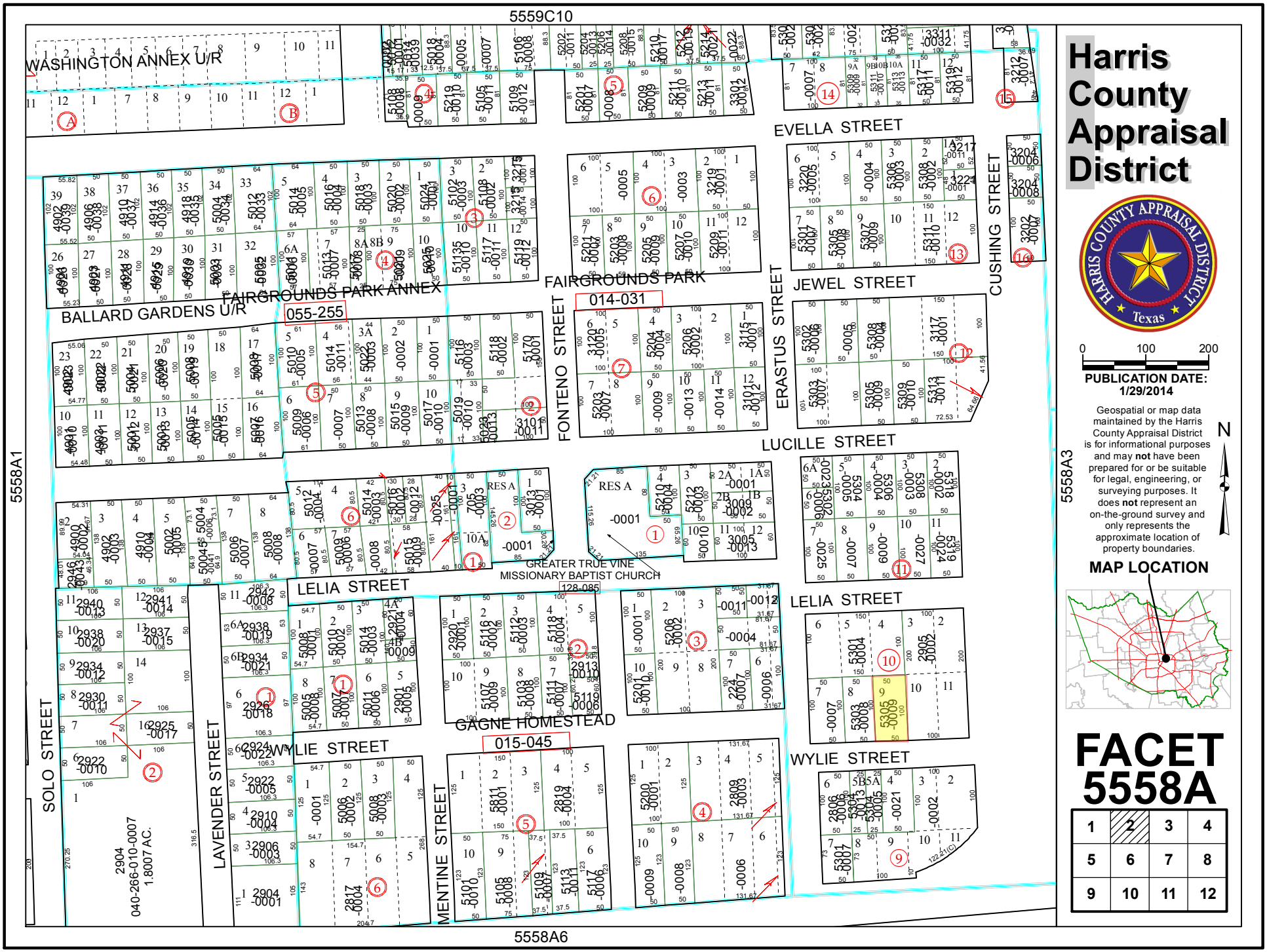
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9215
Date: December 5, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 3rd day of December, 2012, we find the following:

Title Vested In: (Map ID# 55) (Tax ID# 014-042-000-0009)

Victor Delgado Ibarra (by Warranty Deed filed for record under Volume 606, Page 297 and by the Estate of Faustino Ibarra, deceased as filed under Probate No. 222881 in Harris County, Texas)

Property Description:

Lot Nine (9), in Block Ten (10), of Fairground Park, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 81, Page 460 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Wylie Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

1) Abstract of Judgment filed March 1, 2002, under Harris County Clerk's File No. V630014, styled Dillard National Bank, vs. Victor Ibarra, in the principal amount of $3,490.00, plus cost, interest and attorney's fees.

2) Notice of Federal Tax Lien filed June 21, 2007, under Harris County Clerk's File No. 20070377988, against Victor Ibarra, in the principal amount of $14,108.00.

3) Notice of Federal Tax Lien filed July 21, 2007, under Harris County Clerk's File No. 20080378856, against Victor Ibarra, in the principal amount of $6,357.00.

4) Notice of Federal Tax Lien filed February 23, 2009, under Harris County Clerk's File No. 20090073377, against Victor Ibarra, in the principal amount of $34,017.00.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 57

HCAD ID - 0141390000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5008 Lelia St, Houston,TX 77026 (Map ID 57, HCAD ID 0141390000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[11]				Property Ownership		Anticipated Filing Date[12]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[11] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[12] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot One (1), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map and plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Mildred Holmes Wilder, heir and devisee of the estate of Emmitt Holmes (Owner) with an address of 5008 Lelia Street, Houston, Texas 770226. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 14th day of April, 2015.

By: Mildred Holmes Wilder
Name: Mildred Holmes Wilder

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 14th day of April, 2015, personally appeared Mildred Holmes Wilder, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 14th day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

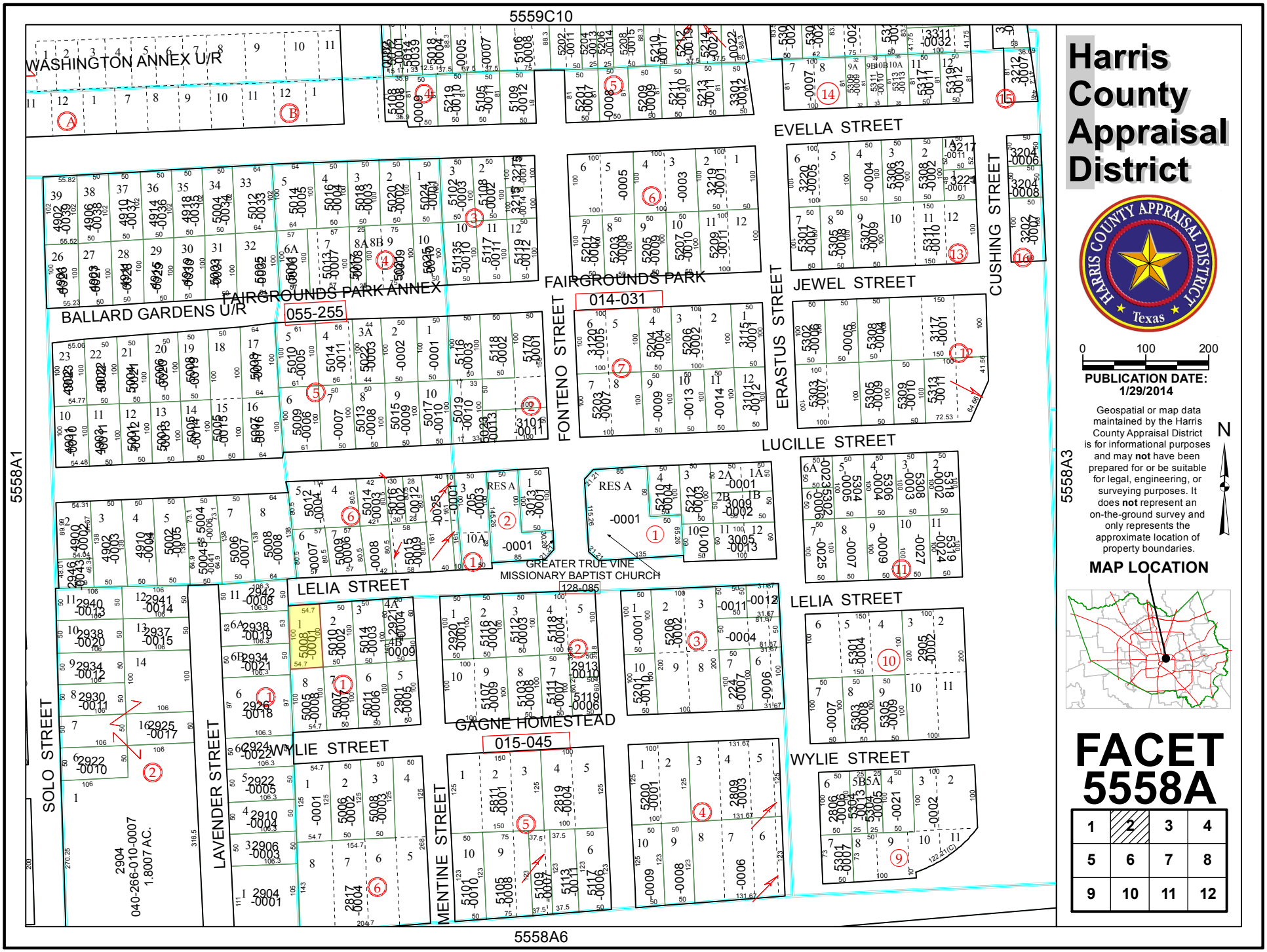
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9230
Date: December 12, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Emmitt Holmes (by Warranty Deed filed for record under Volume 2863, Page 484 of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 57) (Tax ID# 014-139-000-0001)

Lot One (1), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Notice of Lien for work or improvements, filed January 23, 1979 by Health Officer, City of Houston, in the Office of the County Clerk of Harris County, Texas, under Clerk's File No. F939063, to secure the repayment of the sum of $25.00 plus interest and costs, for cutting weeds, clearing and cleaning of the subject property.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 59

HCAD ID - 0141390000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5014 Leila, Houston,TX 77026 (Map ID 59, HCAD ID 0141390000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[15]				Property Ownership		Anticipated Filing Date[16]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[15] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[16] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Three (3), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map and plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Guadalupe Rivera Jr. (Owner) and devisee of the estate Johnnie Ellis with an address of 5014 Lelia, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

[Guadalupe Rivera
Name: Guadalupe Rivera Jr.

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Guadalupe Rivera Jr. [owner], known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31 day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

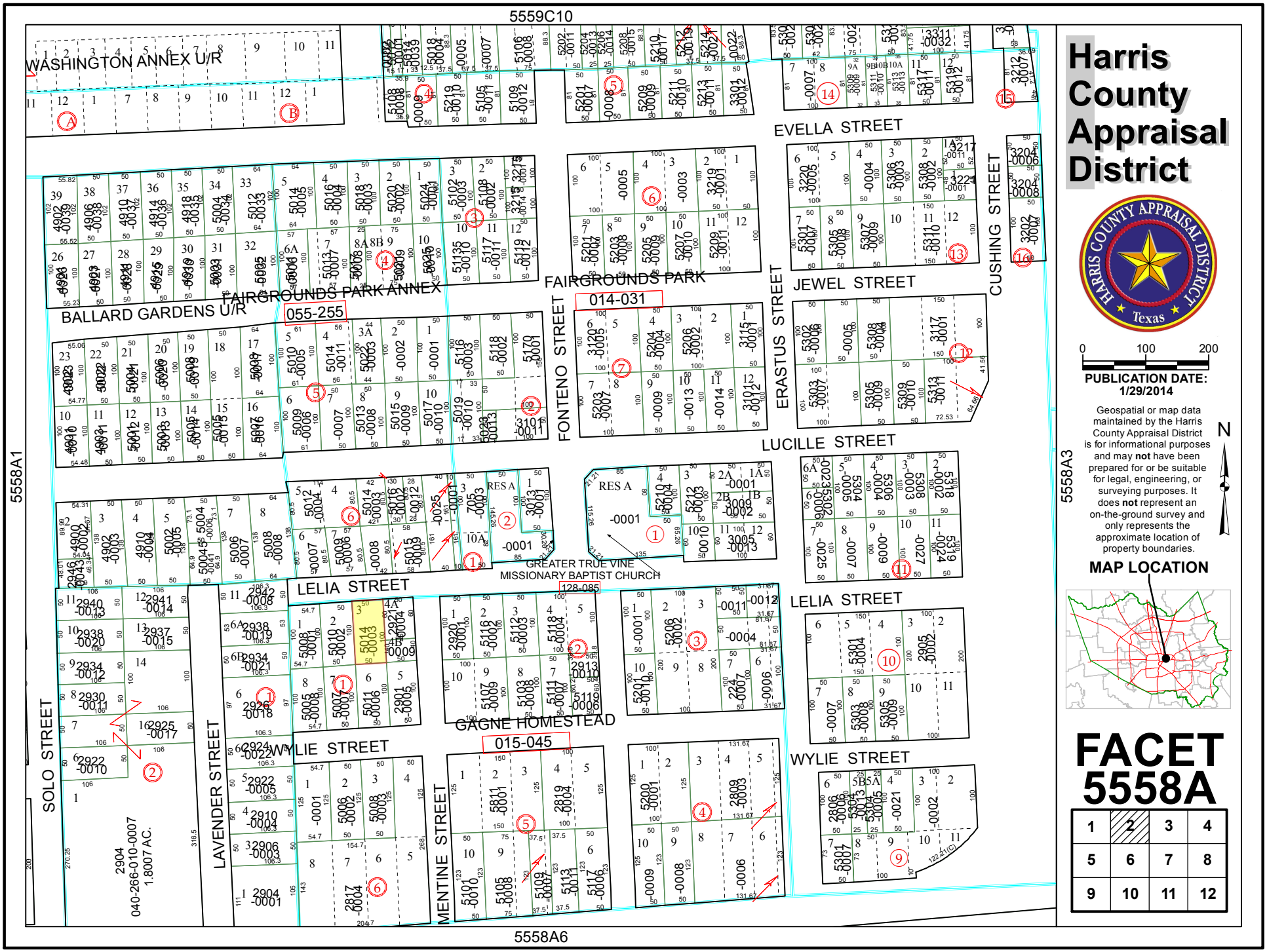
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9234
Date: December 12, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Guadalupe Rivera, Jr. and Flor Estela Rivera (by Warranty Deed filed for record under Harris County Clerk's File No. 20110426670)

Property Description: (Map ID# 59) (Tax ID# 014-139-000-0003)

Lot Three (3), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

1) Abstract of Judgment filed December 24, 2008, under Harris County Clerk's File No. 20080612026, styled State Farm, vs. Flor Rivera, in the principal amount of $4,479.00, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 60

HCAD ID - 0141390000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2421 Clementine, Houston,TX 77026 (Map ID 60, HCAD ID 0141390000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[17]				Property Ownership		Anticipated Filing Date[18]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[17] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[18] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The North sixty feet (60') of Lot Four (4), in Block One (1) of Finn Subdivision, a subdivision in Harris County, Texas, according to the Map or plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Olivia Pineda (Owner) with an address of 2921 Clementine Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

By: Rogelio Pineda
Name: ~~Olivia~~ Pineda
ROGELIO PINEDA

STATE OF TEXAS

HARRIS COUNTY

ROGELIA PINEDA

BEFORE ME, on this the 31st day of March, 2015, personally appeared ~~Olivia Pineda~~, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

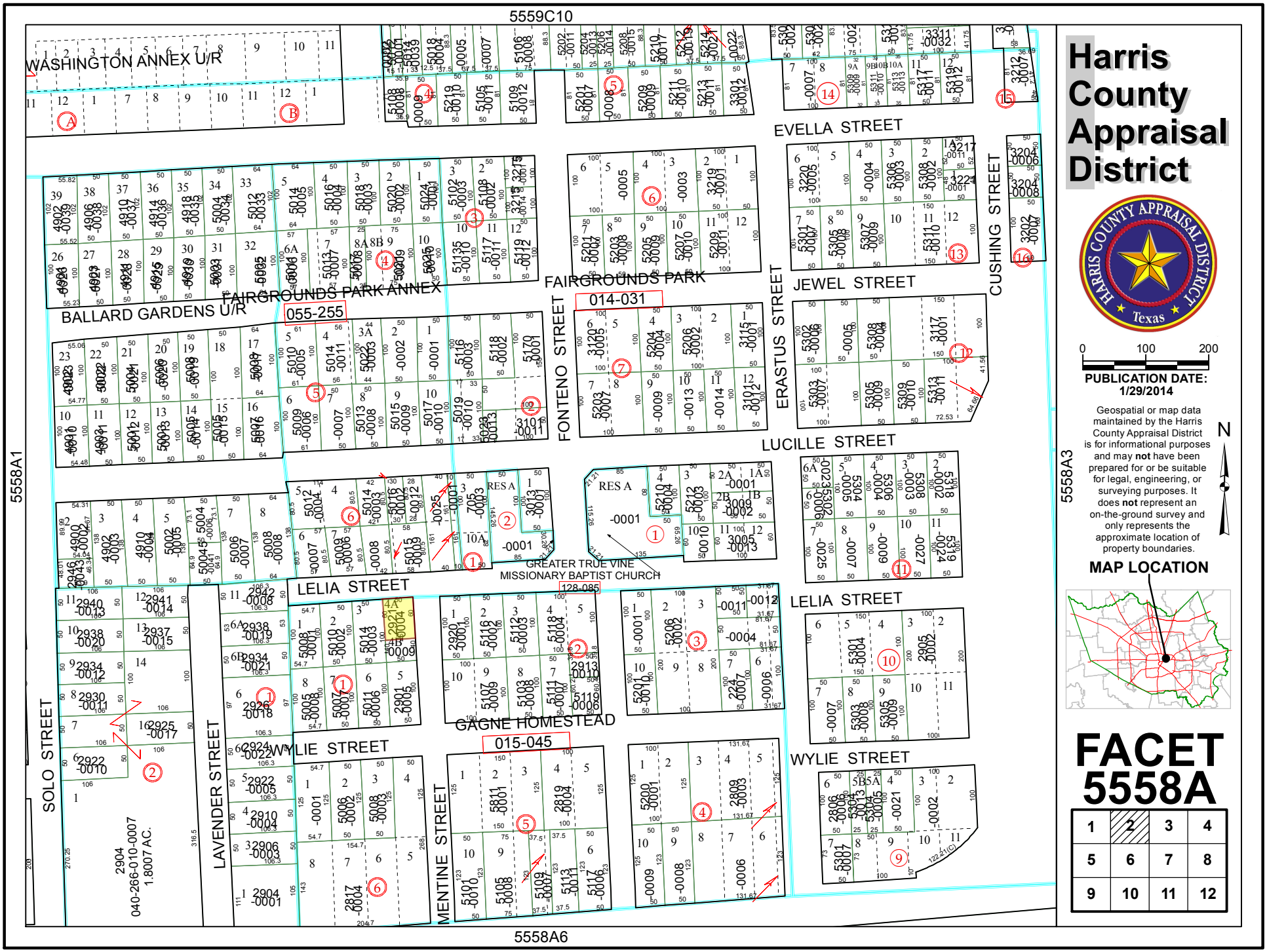
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9239
Date: December 13, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Rogelio Ruiz Pineda and Olivia Pineda, husband and wife (by Warranty Deed filed for record under Harris County Clerk's File No. M698759)

Property Description: (Map ID# 60) (Tax ID# 014-139-000-0004)

The North sixty feet (N 60') of Lot Four (4), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Order of the Building Official of the City of Houston dated January 30, 1990, filed for record under Harris County Clerk's File No(s). M555328, determining that the building(s) are posted as dangerous in accordance with Section 10-326 of the Code of Ordinances, and requiring the owner to take the corrective measures described therein; or the City will demolish said building(s) and place a lien for the expenses incurred.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 61

HCAD ID - 0141390000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 61, HCAD ID 0141390000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[19]				Property Ownership		Anticipated Filing Date[20]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[19] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[20] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The South Foroty feet (S 40') of Lot Four (4), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map and plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Guadalupe Rivera (Owner) and devisee of the estate Johnnie Ellis with an address of 3401 Erastus, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

[Guadalupe Rivera Conde]
Name: Guadalupe Rivera

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Guadalupe Rivera [owner], known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31 day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

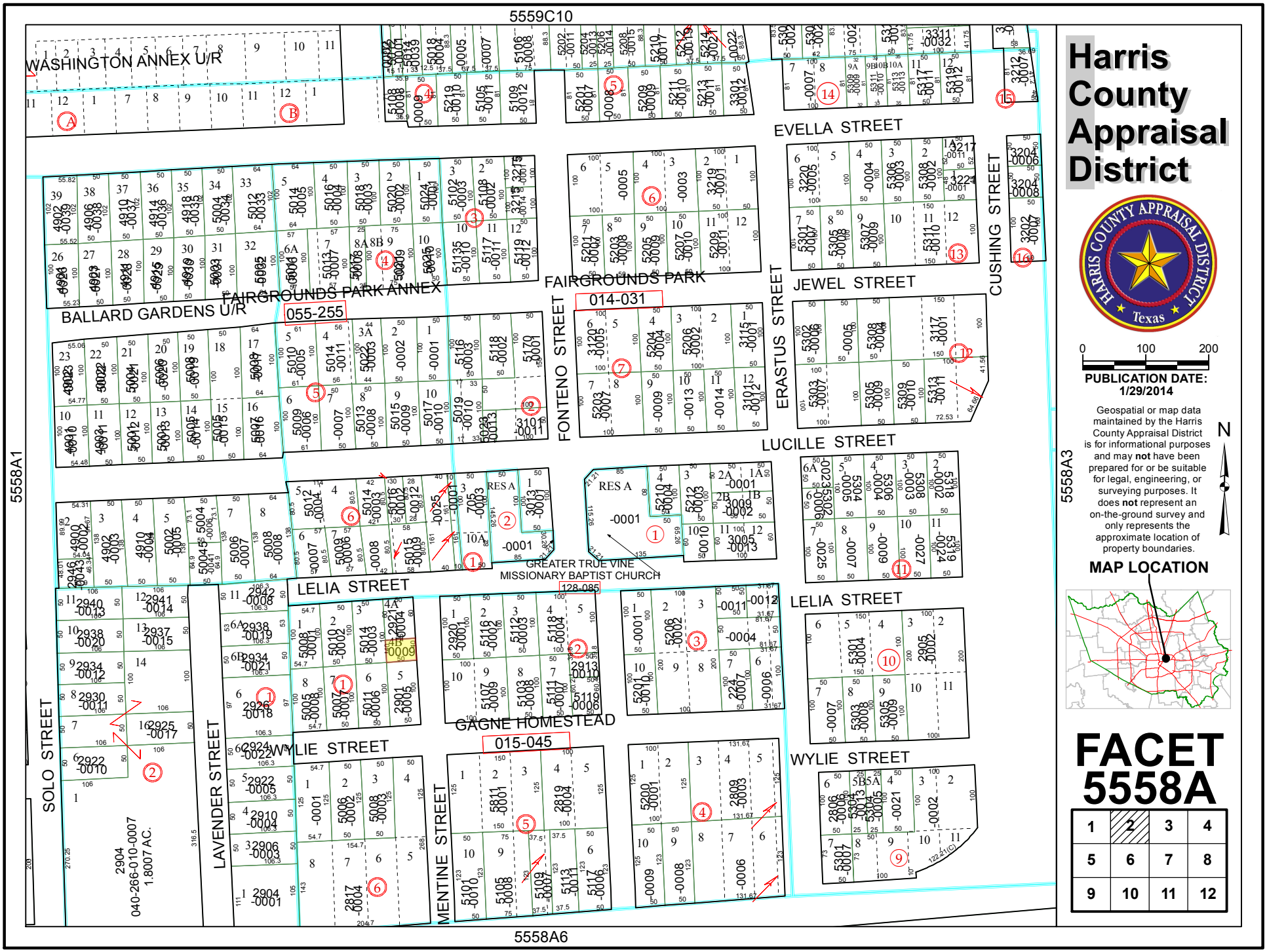
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9243
Date: December 13, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 5th day of December, 2012, we find the following:

Title Vested In:

Guadalupe Rivera and wife, Alicia Rivera (by Warranty Deed filed for record under Harris County Clerk's File No. R478026)

Property Description: (Map ID# 61) (Tax ID# 014-139-000-0009)

The South forty feet (S 40') of Lot Four (4), in Block One (1), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

1) Abstract of Judgment filed April 26, 2010, under Harris County Clerk's File No. 20100166073, styled Cach, LLC, vs. Alicia Rivera, in the principal amount of $3,564.00, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 63

HCAD ID - 0141400000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5116 Lelia St, Houston,TX 77026 (Map ID 63, HCAD ID 0141400000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[23]				Property Ownership		Anticipated Filing Date[24]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[23] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[24] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Two (2) in Block Two (2), Of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas, according to the Map or plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Elizabeth Thomas (Owner) with an address of 5108 Lelia Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

By: X _____
Name: Elizabeth Thomas

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Elizabeth Thomas, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

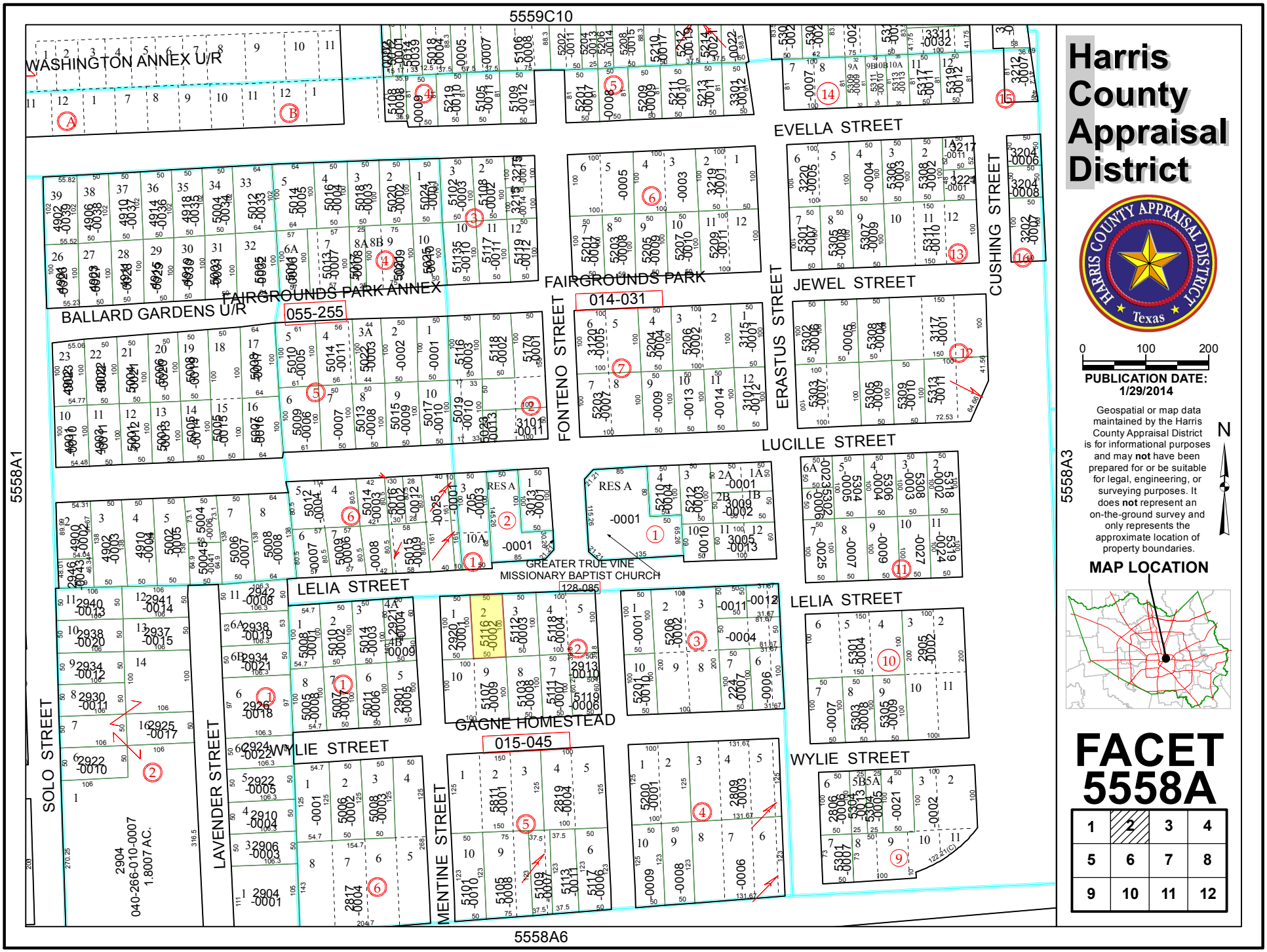
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9274
Date: December 15, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of December, 2012, we find the following:

Title Vested In:

Elizabeth Thomas (by Warranty Deed filed for record under Harris County Clerk's File No. E525502)

Property Description: (Map ID# 63) (Tax ID# 014-140-000-0002)

Lot Two (2), in Block Two (2), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lelia Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

1) Abstract of Judgment filed March 18, 2005, under Harris County Clerk's File No. Y334139, styled USA, vs. Elizabeth Thomas, in the principal amount of $1,337.00, plus cost, interest and attorney's fees.

2) Abstract of Judgment filed January 18, 2006, under Harris County Clerk's File No. Z34499, styled CACV of Colorado, vs. Elizabeth Thomas, in the principal amount of $2,156.00, plus cost, interest and attorney's fees.

3) Abstract of Judgment filed July 9, 2008, under Harris County Clerk's File No. 20080360210, styled Texas Dow Employees Credit Union, vs. Elizabeth Thomas, in the principal amount of $21,784.00, plus cost, interest and attorney's fees.

NOTES:

- The Harris County Appraisal District indicate Carter Thomas as the current tax payer of the subject property, however we find no conveyance into Carter Thomas. There are numerous probates for persons with the name of Elizabeth Thomas, however we cannot determine which, if any, apply.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 64

HCAD ID - 0141400000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5112 Lelia St, Houston,TX 77026 (Map ID 64, HCAD ID 0141400000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[25]				Property Ownership		Anticipated Filing Date[26]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[25] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[26] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Tract Six-B (6-B), Block One (1), of Liberty Road Estates, a subdivision in Harris County, Texas, according to the Map or plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Elizabeth Potts-Thomas, as Owner, Heir, and devisee of the Estate of Francis Potts by Contract for Deed from Clark Investment Company (Owner) with an address of 2934 Lavender Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

By: _____
Name: Elizabeth Thomas

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Elizabeth Thomas, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A FRANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

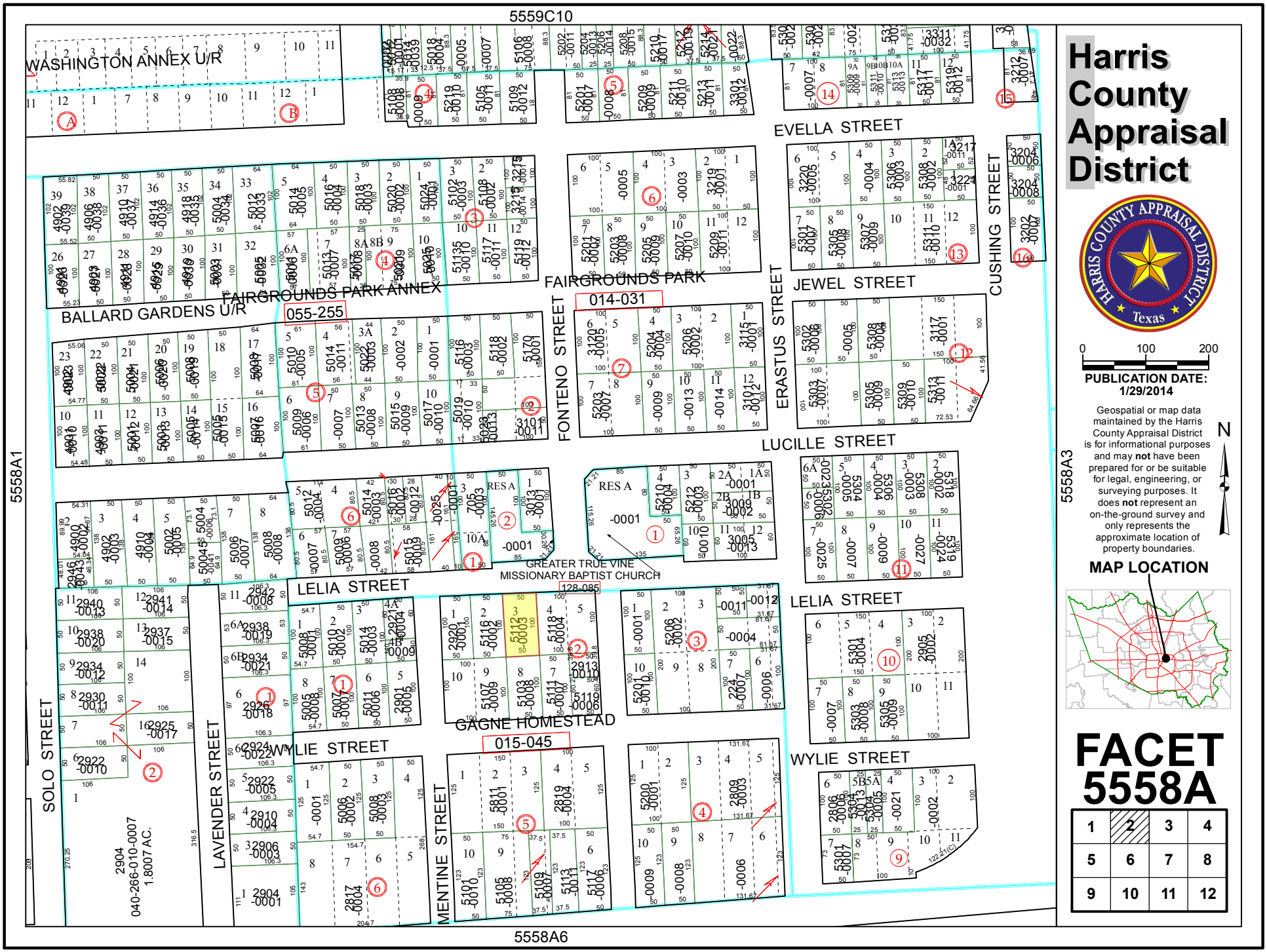
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
055-255
014-031
128-085
015-045
EVELLA STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
FONTENO STREET
ERASTUS STREET
CUSHING STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0
100
200
PUBLICATION DATE:
1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET
5558A
1
2
3
4
5
6
7
8
9
10
11
12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-12-9275
Date: December 15, 2012

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of December, 2012, we find the following:

Title Vested In:

The Heirs and Devisees of the Estate of Francis Potts, deceased (by Warranty Deed filed for record under Volume 511, Page 583 of the Deed Records of Harris County, Texas)

Property Description: (Map ID#64) (Tax ID# 014-140-000-0003)

Lot Three (3), in Block Two (2), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lelia Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

NOTES:

- The Harris County Appraisal District indicate Avie Potts as the current tax payer of the subject property, however we find no conveyance into Avie Potts. It is assumed that Francis Potts is now deceased, however we find no heirship proceedings or probates of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 66

HCAD ID - 0141410000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5211 Wylie, Houston,TX 77026 (Map ID 66, HCAD ID 0141410000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[29]				Property Ownership		Anticipated Filing Date[30]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[29] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[30] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Six (6), In Block Three (3), of Finn Sudvision oft of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Vol. 1 page 55 of the Map Records of Harris of Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leroy Mock (Owner) with an address of 5207 Jewel Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 26th day of February, 2015.

By: Leroy Mock
Name: Leroy Mock

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 26th day of February, 2015, personally appeared Leroy Mock, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 26th day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

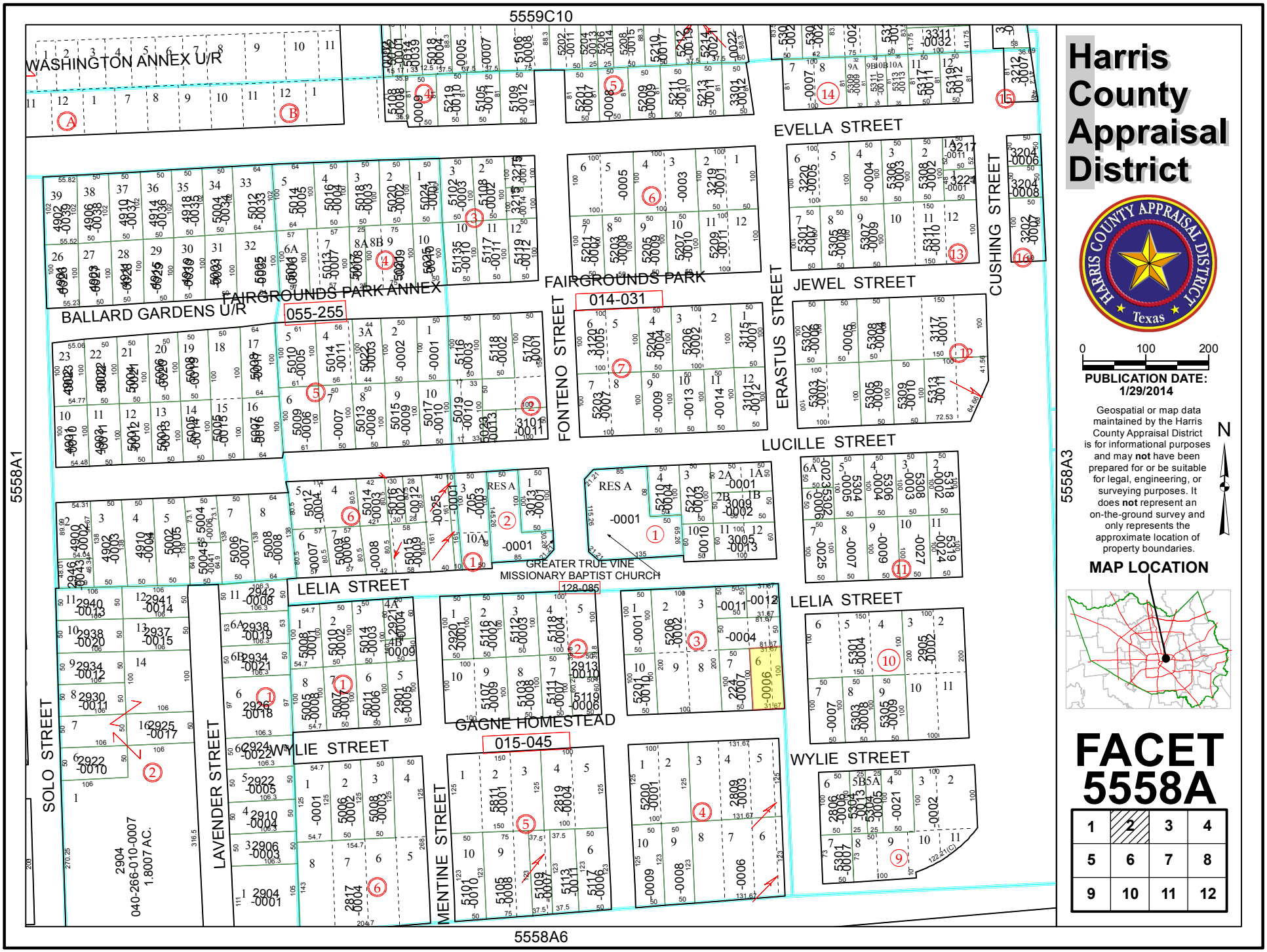
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0337
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Sterling Trust Company for the benefit of Charles Mock (by Warranty Deed filed for record under Harris County Clerk's File No. Z202630)

Property Description: (Map ID# 66) (Tax ID# 041-141-000-0006)

Lot Six (6), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 67

HCAD ID - 0141410000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Wylie, Houston,TX 77026 (Map ID 67, HCAD ID 0141410000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[31]				Property Ownership		Anticipated Filing Date[32]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[31] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[32] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Seven (7), In Block Three (3), of Finn Subdivision oft of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Vol. 1 page 55 of the Map Records of Harris of Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leroy Mock (Owner) with an address of 5207 Jewel Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 26th day of February, 2015.

By: Leroy Mock
Name: Leroy Mock

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 26th day of February, 2015, personally appeared Leroy Mock, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 26th day of February, 2015.

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

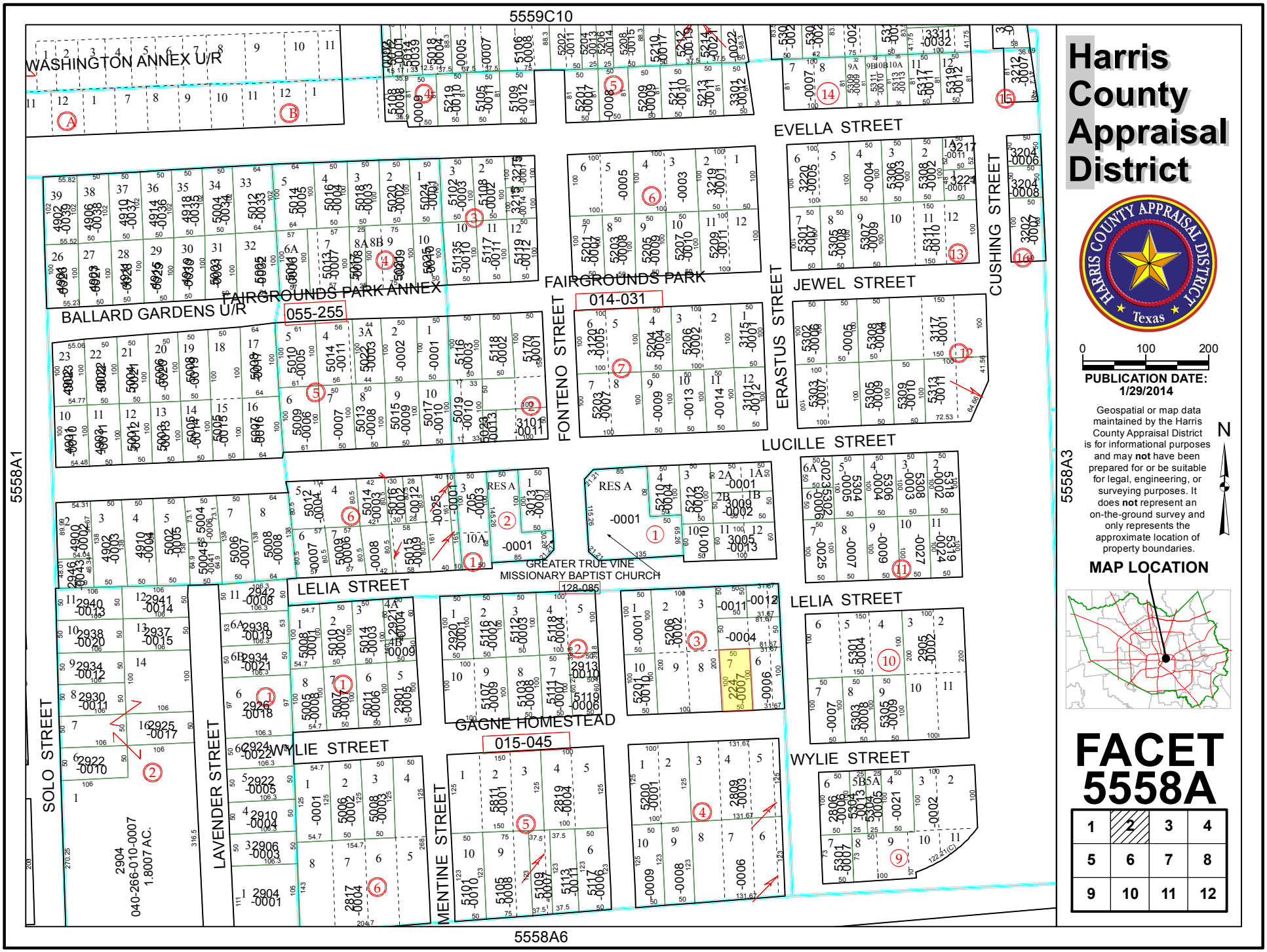
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0334
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Sterling Trust Company for the benefit of Charles Mock (by Warranty Deed filed for record under Harris County Clerk's File No. Z202630)

Property Description: (Map ID# 67) (Tax ID# 041-141-000-0007)

Lot Seven (7), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

None of record.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 68

HCAD ID - 0141410000011

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 68, HCAD ID 0141410000011)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[33]				Property Ownership		Anticipated Filing Date[34]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[33] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[34] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The North on half (1/2) of lot 4, in block 3 of the, Finn Subdivision out of Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat record thereof Volume 1 page 55, of the map records of Harris County, Texas

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leroy Mock (Owner) with an address of 5211 Wylie Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547
This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 26th day of February, 2015.

By: Leroy Mock
Name: Leroy Mock

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Leroy Mock, of owner, known to me to be the person whose name Leroy Mock is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 17th day of Februay, 2015.

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:12-11-2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

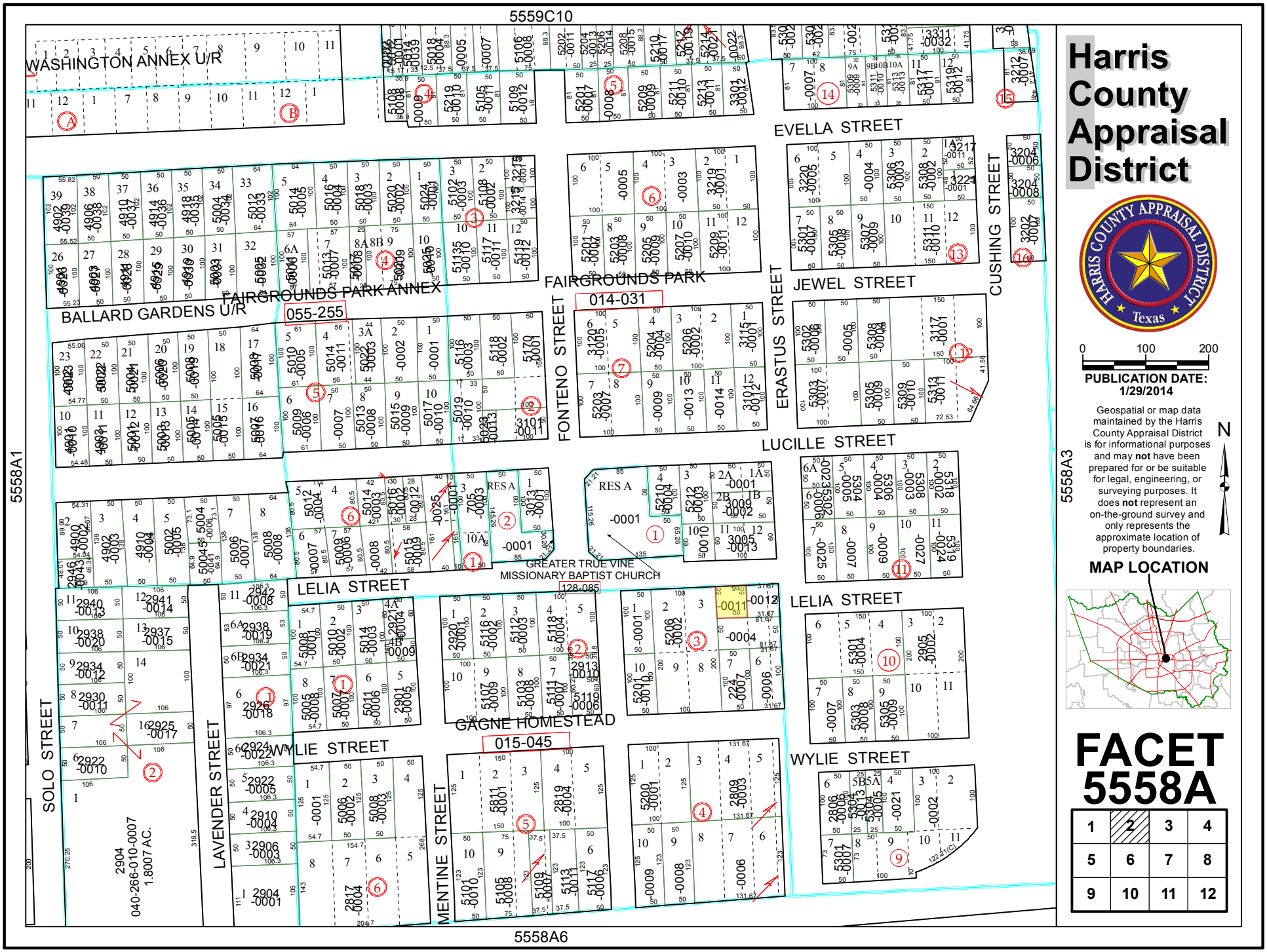
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0498
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Leroy Mock (by Deeds filed for record under Harris County Clerk's File Nos. J664774 and R739434)

Property Description: (Map ID# 68) (Tax ID# 014-141-000-0011)

The North One-half (N 1/2) of Lot Four (4), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Notice of Lien for work or improvements, filed May 30, 1986 by Health Officer, City of Houston, in the Office of the County Clerk of Harris County, Texas, under Clerk's File No. K559500, to secure the repayment of the sum of $180.00 plus interest and costs, for cutting weeds, clearing and cleaning of the subject property.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 69

HCAD ID - 0141410000012

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2925 Erastus St, Houston,TX 77026 (Map ID 69, HCAD ID 0141410000012)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[35]				Property Ownership		Anticipated Filing Date[36]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[35] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[36] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The North on half (1/2) of lot 5, in block 3 of the, Finn Subdivision out of Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat record thereof vol. 1 page 55, of the map records of Harris County, Texas

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leroy Mock (Owner) with an address of 5211 Wylie Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 26th day of February, 2015.

By: Leroy Mock
Name: Leroy Mock

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 26th day of February, 2015, personally appeared Leroy Mock, of owner, known to me to be the person whose name Leroy Mock is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 26th day of February, 2015.

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12-11-2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

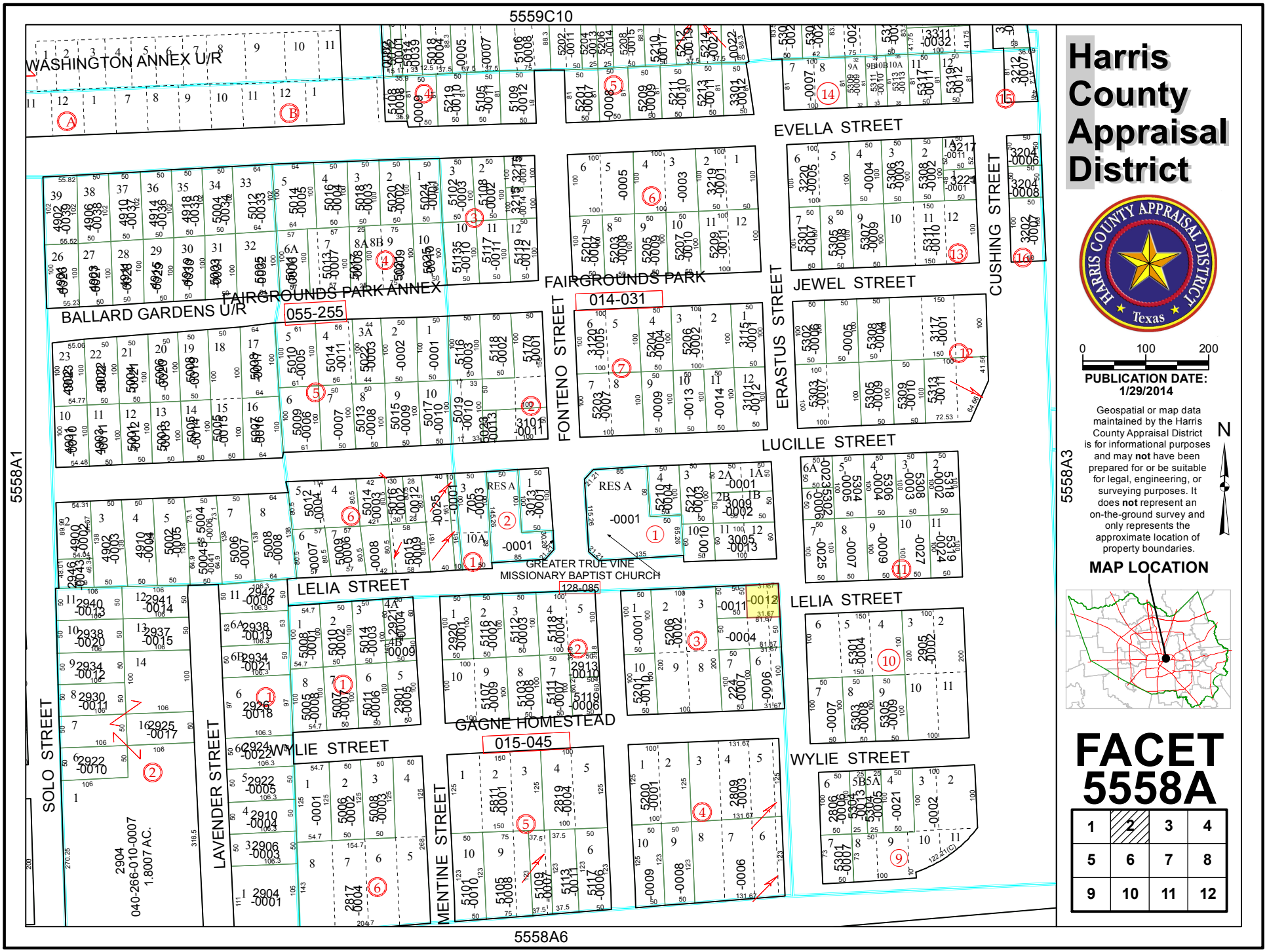
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0499
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Leroy Mock (by Deeds filed for record under Harris County Clerk's File Nos. J664774 and R739434)

Property Description: (Map ID# 69) (Tax ID# 014-141-000-0012)

The North One-half (N 1/2) of Lot Five (5), in Block Three (3), of Finn Subdivision out of the Gagne Homestead, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Right-of-way easement affecting subject property as set forth and defined by instrument(s) recorded in Volume 947, Page 440 of the Deed Records of Harris County, Texas.

b) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Notice of Lien for work or improvements, filed May 30, 1986 by Health Officer, City of Houston, in the Office of the County Clerk of Harris County, Texas, under Clerk's File No. K559500, to secure the repayment of the sum of $180.00 plus interest and costs, for cutting weeds, clearing and cleaning of the subject property.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 75

HCAD ID - 0402660100017

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2925 Lavender St, Houston,TX 77026 (Map ID 75, HCAD ID 0402660100017)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[47]				Property Ownership		Anticipated Filing Date[48]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[47] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[48] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Sixteen (16), in Block Two (2), of Liberty Road Estates, a subdivision in Harris County, Texas according to the map and plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Chamesha Louise Randall (Owner) and devisee of the estate Johnnie Ellis with an address of 4611 Hawk Meadow Drive, Katy, Texas 77449. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

[Chamesha Randall
Name: Chamesha Randall

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Chamesha Randall [owner], known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

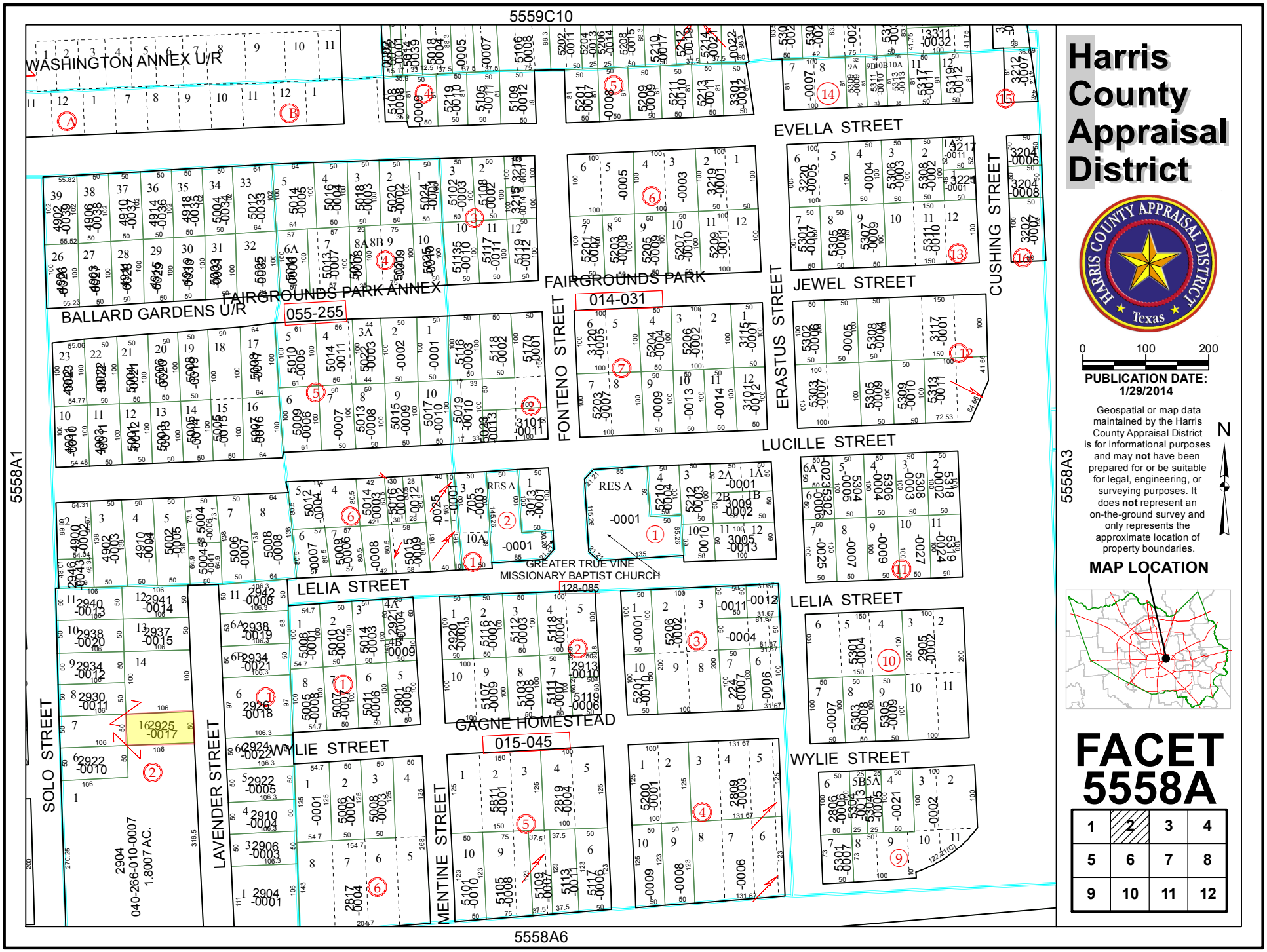
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
EVELLA STREET
FAIRGROUNDS PARK ANNEX
BALLARD GARDENS U/R
055-255
FAIRGROUNDS PARK
014-031
FONTENO STREET
ERASTUS STREET
JEWEL STREET
CUSHING STREET
LUCILLE STREET
LELIA STREET
GREATER TRUE VINE
MISSIONARY BAPTIST CHURCH
128-085
GAGNE HOMESTEAD
015-045
WYLIE STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0 100 200
PUBLICATION DATE: 1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET 5558A
1 2 3 4
5 6 7 8
9 10 11 12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0497
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

John Ellis and wife, Louise Ellis (by Deed filed for record under Volume 2458, Page 665 of the Deed Records of Harris County, Texas) (See notes)

Property Description: (Map ID# 75) (Tax ID# 040-266-010-0017)

Lot Sixteen (16), in Block Two (2), of Liberty Road Estates, an unrecorded subdivision of a 5-1/40th acre tract out of Lot Eight (8), Second Tier from Buffalo Bayou out of the Harris and Wilson Two League Grant in Harris County, Texas and being the same land convoyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by Deed dated September 14, 1894, recorded in Volume 79 at Page 242 of the Deed Records of Harris County, Texas, and said Lot Number Sixteen (16), in Block Two (2), Liberty Road Estates being more particularly described by metes and bounds as follows:

Beginning at the Northwest corner of said 5-1/40th acre tract;

Thence East 126 feet to a point in the North line of said 5-1/40th acre tract;

Thence South 200 feet along a line parallel to the West line of Lavender Street for Northwest corner of tract to be conveyed;

Thence East 106 feet along a line parallel to the North line of said 5-1/40th acre tract for North east corner;

Thence South 50 feet along the West line of Lavender Street for Southeast corner;

Thence West 106 feet along a line parallel to the North line of said 5-1/40th acre tract for Southwest corner;

Thence North 50 feet along a line parallel to the West line of Lavender Street for Northwest corner and place of beginning.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

Those as set forth by instrument filed for record under Volume 2458, Page 665 of the Deed Records of Harris County, Texas.

Exceptions:

a) Building set-back line 20 feet in width along the front property line(s), as set forth by instrument filed for record under Volume 2458, Page 665 of the Deed Records of Harris County, Texas.

b) Building set-back line 3 feet in width along the side property line(s), as set forth by instrument filed for record under Volume 2458, Page 665 of the Deed Records of Harris County, Texas.

c) Utility easement 5 feet wide along the rear property line, as set forth by instrument filed for record under Volume 2458, Page 665 of the Deed Records of Harris County, Texas.

d) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lavender Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

1) Notice of child support Lien filed July 28, 2005, under Harris County Clerk's File No. Y648125, against John Ellis, in the principal amount of $3,660.00, plus costs and interest.

2) Notice of Federal Tax Lien filed April 18, 2006, under Harris County Clerk's File No. Z234237, against John Ellis, in the principal amount of $78,735.00.

3) Abstract of Judgment filed October 15, 2010, under Harris County Clerk's File No. 20100444676, styled LHR, Inc., vs. John Ellis, in the principal amount of $13,986.00, plus cost, interest and attorney's fees.

Notes:

- Harris County Appraisal District reflects the Estate of Johnnie Ellis as the current tax payer of the subject property. We find of record numerous heirship/probate proceedings pertaining to individuals with names similar to John Ellis filed for record in Harris County, Texas. However, we are unable to match any of the said proceedings to John Ellis, record owner.

- We find no heirship/probate proceedings pertaining to Louise Ellis, record owner, filed for record in Harris County, Texas.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

FC29142

LIEN

JAN 31-77 696758 et 029142 LST A PD 3.50

157-20-1662

FILED
JAN 31 9 56 AM 1977
COUNTY CLERK
HARRIS COUNTY, TEXAS

NOTICE OF LIEN

By direction of the City Council of the City of Houston (in Harris County, Texas) notice is hereby given that such City Council, being the governing body of said City, did by ordinance passed and approved January 12, 1977, determine that it is necessary that the hereinafter designated portions of Lavender, Clementine and various other streets in the City of Houston, Texas, known as topping Project No. 303

be improved, and did order that the same be improved in accordance with certain plans and specifications in such ordinance referred to, and did order that a portion of the cost of such improvement be specially assessed as a lien upon property abutting upon said portion of said streets, all as provided by Article 1105-b, Revised Civil Statutes; and notice is hereby given as required by Article 1220-a, Revised Civil Statutes; that a portion of the cost of such improvement is to be and will be specially assessed as a lien upon property abutting thereon.

The respective portion of the street as contained in the attached lists arereferred to as Topping Project No. 303.

Done and signed by me, the City Secretary of said City in its name, this 12th day of January,1977, by direction of its City Council given and contained in the ordinance aforesaid.

City Of Houston

By Anna Russell
City Secretary of the City of Houston

PLEASE RETURN TO:
ANNA RUSSELL, CITY SECRETARY
RM. 203, CITY HALL
P. O. BOX 1562
HOUSTON, TEXAS 77001

157-20-1663

STREET LIST

CONSTRUCTION OF PAVING, LAVENDER, CLEMENTINE, FONTINOT, WYLIE AND LELIA STREETS, KNOWN AS TOPPING PROJECT NO. 303, C.D. 1

GROUP I

Streets to be improved with *Semi-Rigid Base, 1½" Type "D" Hot Mix Asphaltic Concrete Surfacing, Concrete Curb and Gutter and Concrete Sidewalks Both Sides

STREET NAME	ROADWAY WIDTH	BASE & SURF. WIDTH	FROM	TO
Lavender	35'	32'	N.P.L. Liberty Road	564.3' N. N.P.L. Liberty Road
Clementine	27'	24'	N.P.L. Liberty Road	16' S. S.P.L. Lucille
Fontinot	27'	24'	N.P.L. Liberty Road	17' S. S.P.L. Lucille
Fontinot	27'	24'	17.33' N. N.P.L. Jewel	15' S. S.P.L. Evella
Wylie	27'	24'	199.8' W. W.P.L. Clementine	18'W. W.P.L. Erastus
Wylie	27'	24'	10' E. E.P.L. Erastus	W.P.L. Cushing
Lelia	27'	24'	189.85' W. W.P.L. Clementine(As Measured along S.P.L. Lelia)	W.P.L. Cushing

*SEMI-RIGID BASE SHALL BE:

1. 7" Cement Stabilized Shell Base Course,
2. 7" Lime Stabilized Crushed Limestone Base Course,
3. 6" Hot Mix Asphaltic Concrete Base, and/or
4. 8" Lime Stabilized Pit-Run Gravel Base Course

157-20-1664

GROUP II

CONCRETE SIDEWALKS ONLY(Both Sides of Street)

STREET NAME	FROM	TO
Clementine	16' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	17' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	N.P.L. Jewel	17.33' N.N.P.L. Jewel
Fontinot	15' S.S.P.L. Evella	S.P.L. Evella
Wylie	18' W.W.P.L. Erastus	W.P.L. Erastus
Wylie	E.P.L. Erastus	10' E.E.P.L. Erastus

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 76

HCAD ID - 0402660100019

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2938 Lavender St, Houston,TX 77026 (Map ID 76, HCAD ID 0402660100019)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[49]				Property Ownership		Anticipated Filing Date[50]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[49] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[50] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Ten (10), and the North Three (3) feet of Lot Nine (9), Liberty Road Estates, an unrecorded subdivision of the Northwest portion of the Gagne tract in Harris County, Texas according to the map and plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Mary D. Hutchins, daughter and sole heir of Essie Lee Hutchins (Owner) with an address of 2938 Lavender Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 7th day of April, 2015.

By: Mary D Hutchins
Name: Mary D. Hutchins

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 7th day of April, 2015, personally appeared Mary D. Hutchins, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22 day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

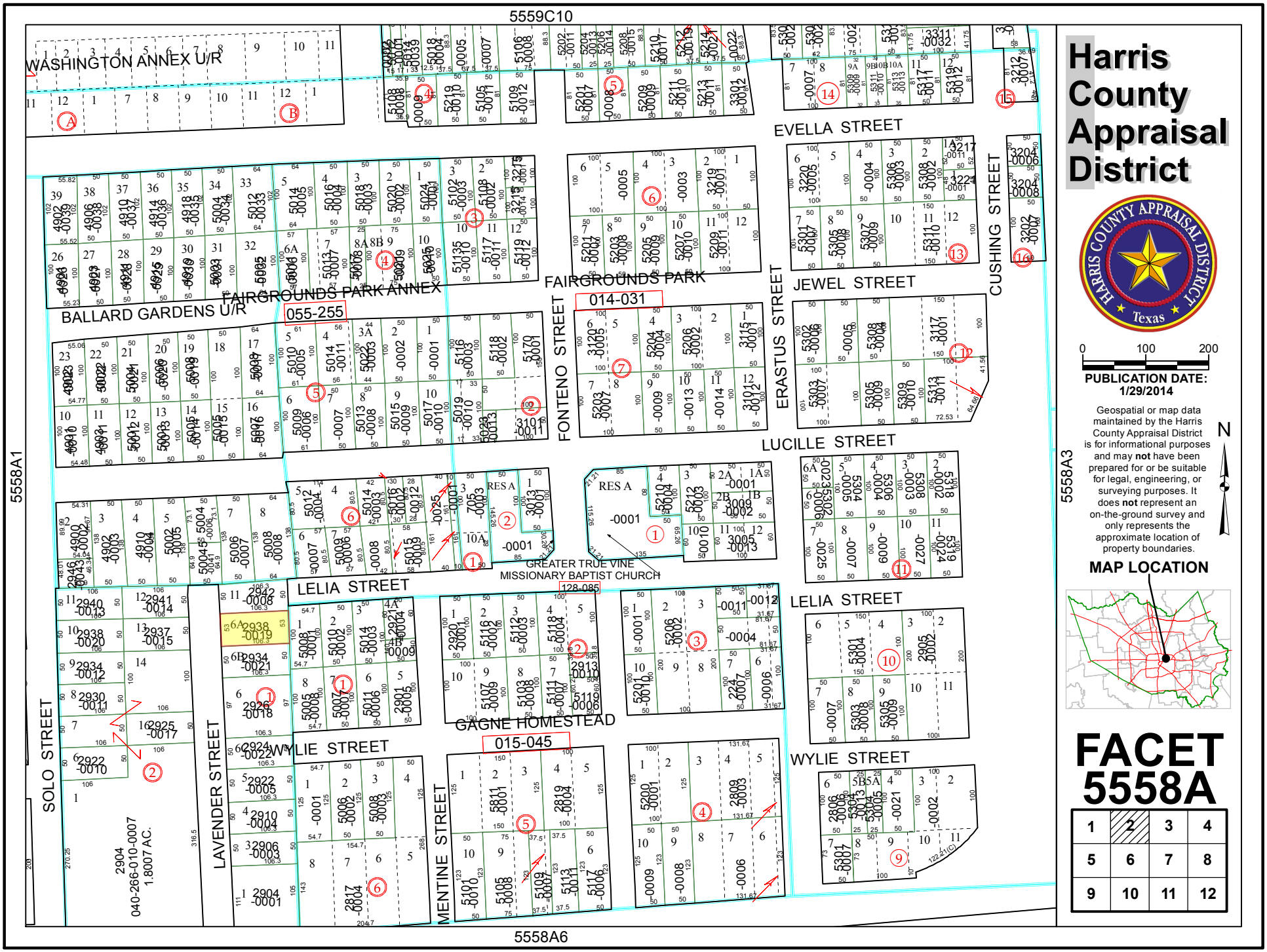
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0479
Date: January 22, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Essie Lee Hutchins (by Warranty Deed filed for record under Harris County Clerk's File No. P469225)

Property Description: (Map ID# 76) (Tax ID# 040-266-010-0019)

Lot Ten (10), and the North Three (3) feet of Lot Nine (9), Liberty Road Estates, an unrecorded subdivision, same being a resubdivision of a tract of 5.140 acres out of the Northwest portion of the Gagne Tract, which is the middle portion of Lot Eight (8), Second Tier from Buffalo Bayou, out of the Harris & Wilson Two League Grant in Harris County, Texas and being the same land conveyed to John Grado and V. Billitti by Mary Alice Alexander, et vir, by deed dated September 14, 1894, recorded in Volume 79, Page 242 of the Deed Records of Harris County, Texas. Said Lot Ten (10) and North Three (3) feet of Lot Nine (9), Liberty Road Estates is further described by metes and bounds as follows to wit:

Beginning at the Northeast corner of said 5.140 acre tract;

THENCE South 50 feet for place of beginning, being the Northeast corner of the tract herein described, and at a point in the East line of the Pancamo tract;

THENCE South 53 feet along the East line of the Pancamo tract a distance of 53 feet for the Southeast corner;

THENCE West a distance of 106.3 feet to a point in the East line of Lavender Street for the Southwest corner;

THENCE North a distance of 53 feet, same being the Southwest corner of Lot 11;

THENCE East a distance of 106.3 feet to the place of beginning.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lavender Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

FC29142

LIEN

JAN 31-77 696758 et 029142 LST A PD 3.50

157-20-1662

FILED
JAN 31 9 56 AM 1977
COUNTY CLERK
HARRIS COUNTY, TEXAS

NOTICE OF LIEN

By direction of the City Council of the City of Houston (in Harris County, Texas) notice is hereby given that such City Council, being the governing body of said City, did by ordinance passed and approved January 12, 1977, determine that it is necessary that the hereinafter designated portions of Lavender, Clementine and various other streets in the City of Houston, Texas, known as topping Project No. 303

be improved, and did order that the same be improved in accordance with certain plans and specifications in such ordinance referred to, and did order that a portion of the cost of such improvement be specially assessed as a lien upon property abutting upon said portion of said streets, all as provided by Article 1105-b, Revised Civil Statutes; and notice is hereby given as required by Article 1220-a, Revised Civil Statutes; that a portion of the cost of such improvement is to be and will be specially assessed as a lien upon property abutting thereon.

The respective portion of the street as contained in the attached lists arereferred to as Topping Project No. 303.

Done and signed by me, the City Secretary of said City in its name, this 12th day of January,1977, by direction of its City Council given and contained in the ordinance aforesaid.

City Of Houston

By Anna Russell
City Secretary of the City of Houston

PLEASE RETURN TO:
ANNA RUSSELL, CITY SECRETARY
RM. 203, CITY HALL
P. O. BOX 1562
HOUSTON, TEXAS 77001

157-20-1663

STREET LIST

CONSTRUCTION OF PAVING, LAVENDER, CLEMENTINE, FONTINOT, WYLIE AND LELIA STREETS, KNOWN AS TOPPING PROJECT NO. 303, C.D. 1

GROUP I

Streets to be improved with *Semi-Rigid Base, 1½" Type "D" Hot Mix Asphaltic Concrete Surfacing, Concrete Curb and Gutter and Concrete Sidewalks Both Sides

STREET NAME	ROADWAY WIDTH	BASE & SURF. WIDTH	FROM	TO
Lavender	35'	32'	N.P.L. Liberty Road	564.3' N. N.P.L. Liberty Road
Clementine	27'	24'	N.P.L. Liberty Road	16' S. S.P.L. Lucille
Fontinot	27'	24'	N.P.L. Liberty Road	17' S. S.P.L. Lucille
Fontinot	27'	24'	17.33' N. N.P.L. Jewel	15' S. S.P.L. Evella
Wylie	27'	24'	199.8' W. W.P.L. Clementine	18'W. W.P.L. Erastus
Wylie	27'	24'	10' E. E.P.L. Erastus	W.P.L. Cushing
Lelia	27'	24'	189.85' W. W.P.L. Clementine(As Measured along S.P.L. Lelia)	W.P.L. Cushing

*SEMI-RIGID BASE SHALL BE:

1. 7" Cement Stabilized Shell Base Course,
2. 7" Lime Stabilized Crushed Limestone Base Course,
3. 6" Hot Mix Asphaltic Concrete Base, and/or
4. 8" Lime Stabilized Pit-Run Gravel Base Course

157-20-1664

GROUP II

CONCRETE SIDEWALKS ONLY(Both Sides of Street)

STREET NAME	FROM	TO
Clementine	16' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	17' S.S.P.L. Lucille	S.P.L. Lucille
Fontinot	N.P.L. Jewel	17.33' N.N.P.L. Jewel
Fontinot	15' S.S.P.L. Evella	S.P.L. Evella
Wylie	18' W.W.P.L. Erastus	W.P.L. Erastus
Wylie	E.P.L. Erastus	10' E.E.P.L. Erastus

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 77

HCAD ID - 0402660100021

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2934 Lavender St, Houston,TX 77026 (Map ID 77, HCAD ID 0402660100021)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[51]				Property Ownership		Anticipated Filing Date[52]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[51] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[52] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS	§
	§
COUNTY OF HARRIS	§

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Tract Six-B (6-B), Block One (1), of Liberty Road Estates, a subdivision in Harris County, Texas, according to the Map or plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Zearlene Osborn, by Contract for Deed from Clark Investment Company (Owner) with an address of 2934 Lavender Street, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 31st day of March, 2015.

By: Zearlene Osborne
Name: Zearlene Osborn

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 31st day of March, 2015, personally appeared Zearlene Osborn, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31st day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

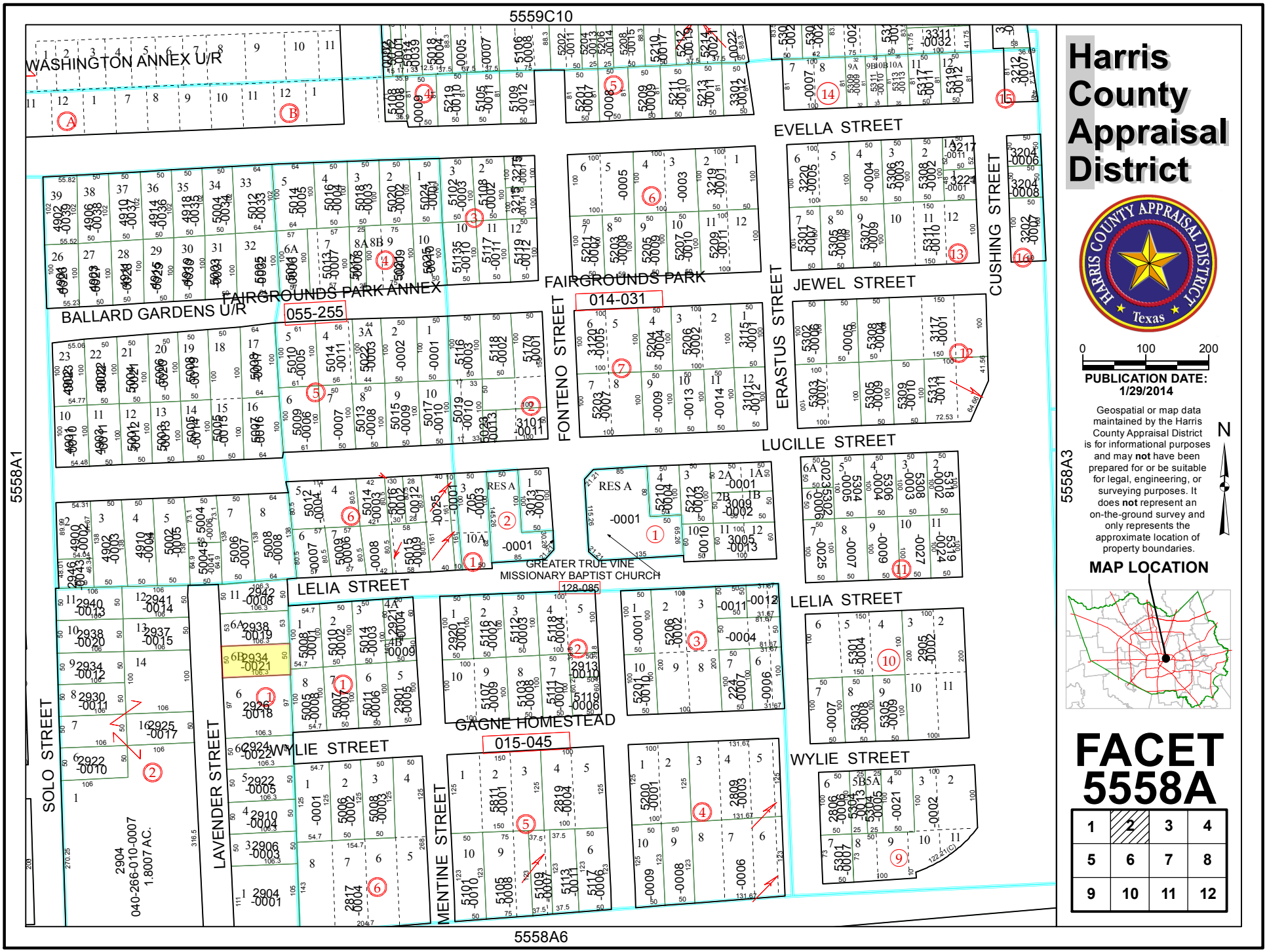
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0512
Date: January 23, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Clark Investment Company (by Deeds filed for record under Volume 2009, Page 337 and Volume 2015, Page 716, both of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 77) (Tax ID# 040-266-010-0021)

Tract Six-B (6B), in Block One (1), of Liberty Road Estates, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 1, Page 55 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's file No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lavender Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

Notes:

- Harris County Appraisal District describes the subject property as Tract 6B, however we find no conveyance describing same. According to the Appraisal Map, the subject property is comprised of portions of Lots 8 and 9, in Block 1 of Liberty Road Estates, unrecorded.

- Harris County Appraisal District reflects Zearlene Osborn as the current tax payer, however we find no conveyance out of Clark Investment Company or into Zearlene Osborn.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 81

HCAD ID - 0522570000008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 81, HCAD ID 0522570000008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[59]				Property Ownership		Anticipated Filing Date[60]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[59] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[60] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The West 42 feet of Lot 8, in Block 6, of Fairgrounds Park Annex, an addition in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Catherine Hall Lawrence (Owner) with an address of 5014 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 29 day of April, 2015.

[OWNER]
By: Catherine Lawrence
Name: Catherine Hall Lawrence

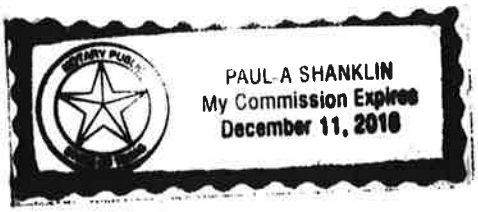
STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _____ day of April, 2015, personally appeared Catherine Hall Lawrence, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 29 day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____



Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

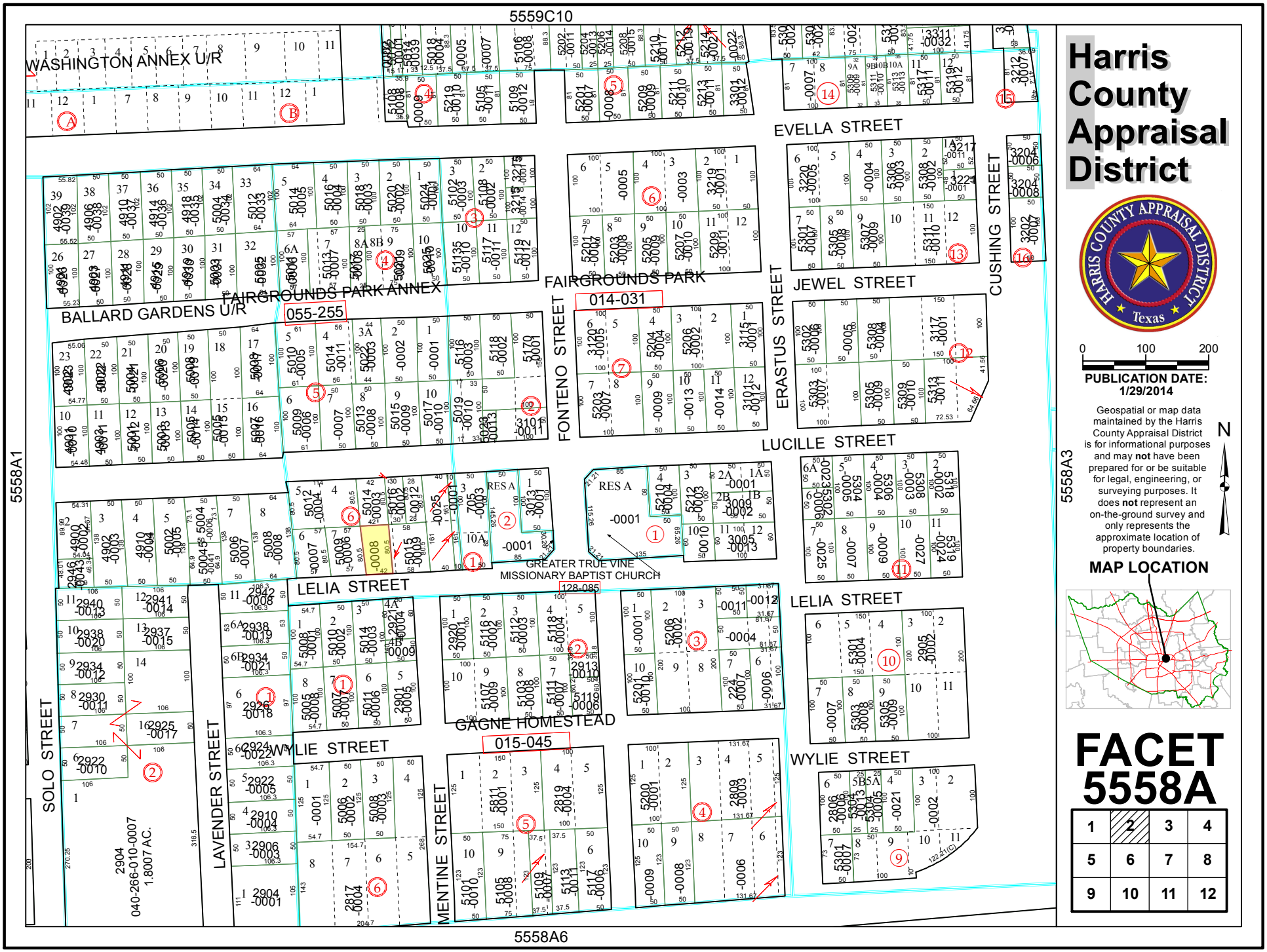
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0311
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Herbert B. Hall and Nealie Hall, his wife (by Deed filed for record under Volume 2391, Page 650 of the Deed Records of Harris County, Texas)

Property Description: (Map ID# 81) (Tax ID# 052-257-000-0008)

The West 42 feet of Lot Eight (8), in Block Six (6), of Fairground Park Annex, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 499, Page 70 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Paving Lien Notice filed on January 31, 1977, (topping project no. 303), filed under Harris County Clerk's File No. F029142, (Film Code No. 157-20-1662), executed by the City of Houston, showing portions of Lelia Street, and assessing a portion of the cost thereof, against the owners of the property abutting thereon.

Involuntary Liens:

None of record.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B (DNAPL), MW-70B (DNAPL), MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-10B, MW-11B, MW-08, MW-11A, P-12, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.	
HOUSTON WOOD PRESERVING WORKS	
Exhibit 2 **GROUNDWATER AFFECTED PROPERTY**	
PROJECT: 1358	BY: ADJ
DATE: NOV., 2015	CHECKED: ECM
REVISIONS	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 82

HCAD ID - 0522570000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5015 Lelia St, Houston,TX 77026 (Map ID 82, HCAD ID 0522570000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[61]				Property Ownership		Anticipated Filing Date[62]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[61] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[62] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The East eight feet of Lot Eight (8) and all of the adjoining lot Nine (9), in block Six (6), of Fairground Park Annex, a Subdivision, a subdivision In Harris County, Texas according to the Map or Plat records thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Manuel Castillo (Owner) with an address of 5015 Lelia, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 24 day of March, 2015.

By: x Manuel Castillo
Manuel Castillo

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 24th day of March, 2015, personally appeared Manuel Castillo, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 24th day of March, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

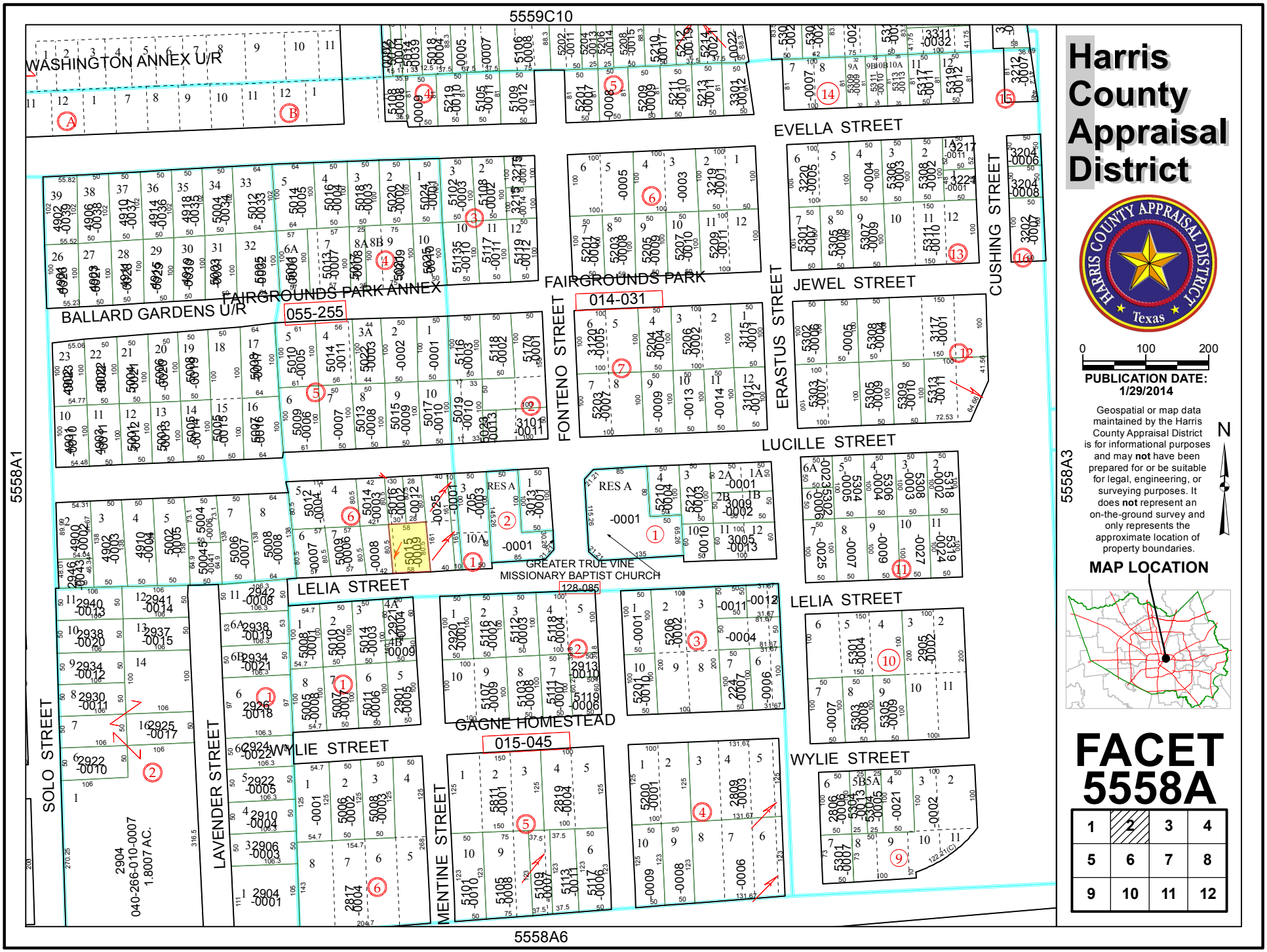
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0314
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

Manuel M. Castillo (by Warranty Deed filed for record under Harris County Clerk's File No. Y888905)

Property Description: (Map ID# 82) (Tax ID# 052-257-000-0009)

The East 8 feet of Lot Eight (8) and all of the adjoining Lot Nine (9), in Block Six (6), of Fairground Park Annex, a subdivision in Harris County, Texas according to the map or plat thereof, recorded in Volume 499, Page 70 of the Deed Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

None of record.

Exceptions:

a) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Vendor's Lien retained in Deed dated November 4, 2005, filed for record on November 9, 2005, under Harris County Clerk's File No. Y888905, executed by K.A.P. Investments, Inc., to Manuel M. Castillo, securing one certain promissory note of even date therewith in the principal amount of $71,000.00, payable to the order of Sterling Financial Investment; said note and Lien being additionally secured by Deed of Trust of even date therewith, in favor of Thomas F. Vetters, as Trustee, with all terms, conditions and stipulations contained therein; including any additional indebtedness secured thereby, as same having been filed for record November 9, 2005 under County Clerk's File No. Y888906. The note and Lien as described herein and as security for the repayment thereof, having been assigned to JPMorgan Chase Bank, N. A., in instrument filed for record under Clerk's File No. Y888907, in the Office of Real Property Records of Harris County, Texas.

Involuntary Liens:

1) Notice of Federal Tax Lien filed January 9, 2004, under Harris County Clerk's File No. X314847, against Manuel Castillo, in the principal amount of $16,302.00.

2) Abstract of Judgment filed August 30, 2005, under Harris County Clerk's File No. Y730650, styled the State of Texas, vs. Manuel Castillo, in the principal amount of $500.00, plus cost, interest and attorney's fees.

3) Abstract of Judgment filed September 20, 2012, under Harris County Clerk's File No. 20120433419, styled CACH, LLC, vs. Manuel Castillo, in the principal amount of $3,196.00, plus cost, interest and attorney's fees.

CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner

20120433419
09/20/2012 RP2 $16.00

ABSTRACT OF JUDGMENT

STATE OF TEXAS §
§
COUNTY OF HARRIS §

I, Richard Clark, attorney of record for CACH, LLC Judgment Plaintiff, certify that in Cause No. 982191, IN THE COUNTY CIVIL COURT AT LAW NUMBER THREE (3) of HARRIS County, Texas, wherein CACH, LLC is Plaintiff and MANUEL CASTILLO is Defendant. Judgment Plaintiff recovered a judgment against MANUEL CASTILLO, Judgment Defendant.

Judgment Plaintiff's mailing address is c/o The Law Office of Richard Clark, PLLC, 3030 S. Gessner Suite 200, Houston, Texas 77063.

Judgment Defendant's Address is 11314 GLADEFIELD DR, HOUSTON, TX 77099.

Judgment was rendered on December 13, 2011, in the amount of $3,196.94, attorney's fees in the amount of $1,054.99, and court costs in the amount of $ 407.73, plus interest in the amount of $0.00.

The interest rate on the judgment is 5.00% per year, from date of judgment until paid.

The judgment is entitled to the following credits: $ 0.00.

By: _____
Richard E. Clark
State Bar No. 00785765
Attorneys for the Plaintiff,
CACH, LLC

BEFORE ME, the undersigned authority, on this 17 day of September, 2012, personally appeared Richard Clark, who swore an oath that the information in this abstract of judgment is true and correct.

JOSEPH DRAKE NICHOLS
MY COMMISSION EXPIRES
March 17, 2013

_____
Notary Public, State of Texas

AFTER RECORDING PLEASE RETURN TO:
RICHARD CLARK
3030 S. GESSNER SUITE 200
HOUSTON, TEXAS 77063

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.
THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas

SEP 20 2012

Stan Stanart
COUNTY CLERK
HARRIS COUNTY, TEXAS

FILED FOR RECORD
8:00 AM

SEP, 20 2012

Stan Stanart
County Clerk, Harris County, Texas

CACH, LLC vs MANUEL CASTILLO
120000410041

SP-09-02-0234

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 83

HCAD ID - 1280850010001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3010 Fontinot, Houston,TX 77026 (Map ID 83, HCAD ID 1280850010001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[63]				Property Ownership		Anticipated Filing Date[64]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[63] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[64] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Reserve "A" in Block One (1) of Greater True Vine Missionary Baptist Church, a subdivision in Harris County, Texas according to the map or plat thereof, recorded film code # 599251, of the map records of Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater True Vine Missionary Baptist Church (Owner) with an address of 3010 Fontinot, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this __19th__ day of February, 2015.

Greater True Vine Baptist Church

By: _____
Name: Matthew R. Alix Sr., Pastor

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Matthew R. Alix, Sr., Pastor, of Greater True Vine Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

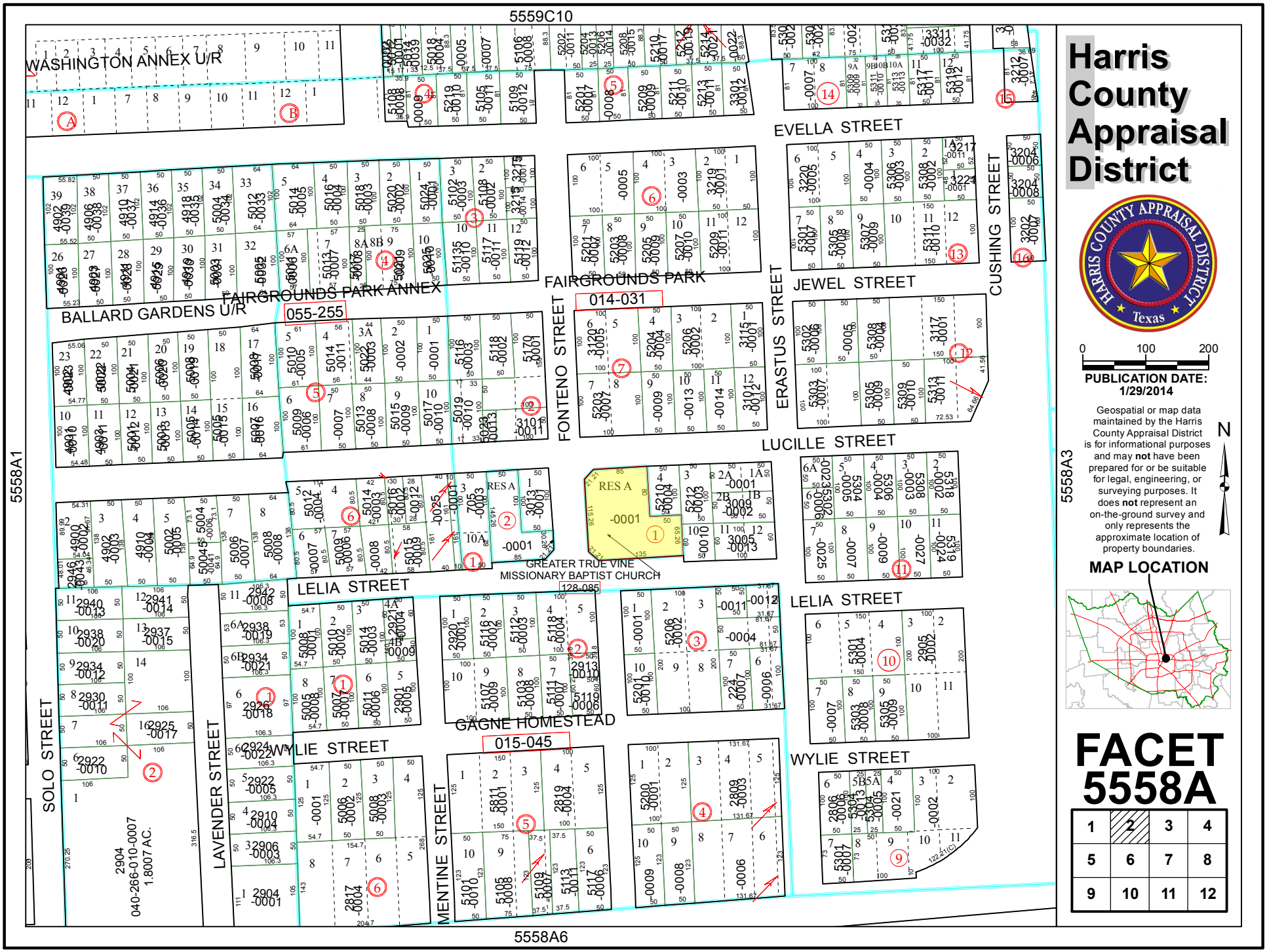
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0323
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

True Vine Baptist Church, a/k/a True Vine Missionary Baptist Church, a/k/a Greater True Vine Baptist Church, a/k/a Greater True Vine Missionary Baptist Church (by Deeds filed for record under Volume 1285, Page 139 and Volume 1656, Page 572 of the Deed Records and under Clerk's File Nos. P517012, S874736, T009320, T924667 and x213261, all of Harris County, Texas)

Property Description: (Map ID# 83) (Tax ID# 128-085-001-0001)

Reserve "A", in Block One (1), of Greater True Vine Missionary Baptist Church, a subdivision in Harris County, Texas according to the map or plat thereof, recorded under Film Code No. 599251, of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

Those as set forth by instrument(s) filed for record under Film Code No. 599251 of the Map Records of Harris County, Texas.

Exceptions:

a) Building set-back line 10 feet in width along the north, west and south property line(s), as shown by the recorded plat of said subdivision.

b) Drainage easement 15 feet in width on each side of the centerlines of all natural drainage courses as shown by the recorded plat of said subdivision.

c) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Deed of Trust dated April 18, 2007, filed for record on April 19, 2007, under County Clerk's File No. 20070237684, in the office of the County Clerk of Harris County, Texas, executed by Greater True Vine Missionary Baptist Church, in favor of David B. Terry, as Trustee, securing the obligations as set out in that certain promissory note of even date therewith in the principal amount of $300,000.00, payable to the order of Comerica Bank, and subject to all terms, conditions and stipulations contained therein; including any additional indebtedness secured thereby.

Involuntary Liens:

None of record.

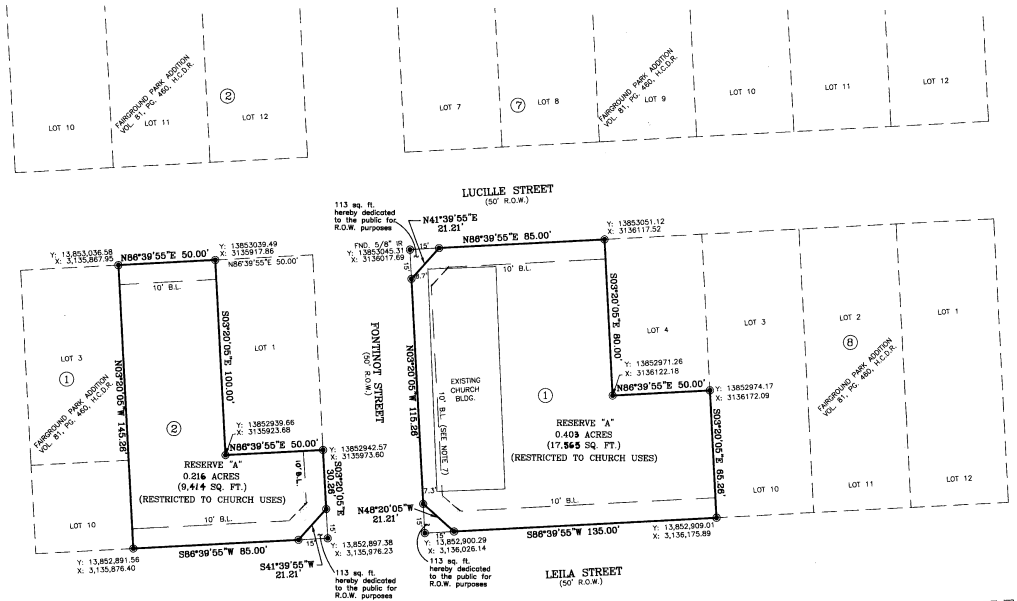
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY: TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

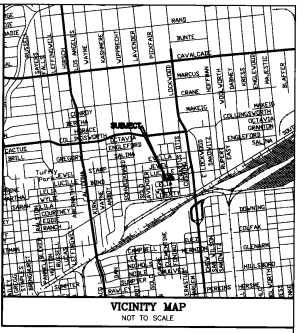
This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner





2754179
04/26/06 20123439
$60.00

30 15 0 30 60 90

● = SET 3/4" IR W/CAP, UNLESS OTHERWISE NOTED

I, Kenneth A. Gruller, R.P.L.S., am registered under the laws of the State of Texas to practice the profession of surveying and hereby certify that the above subdivision is true and correct; was prepared from an actual survey of the property made under my supervision on the ground; that all boundary corners, angle points, points of curvature and other points of reference have been marked with iron (or other suitable permanent metal) pipes or rods have an outside diameter of not less than three quarter (3/4) inch and a length of not less than three (3) feet; and that the plat boundary corners have been tied to the Texas State Plane Coordinate NAD83 Projections.

05-30-2006

Kenneth A. Gruller, R.P.L.S.
Texas Registration No. 5476

STATE OF TEXAS
REGISTERED
KENNETH A. GRULLER
5476
PROFESSIONAL
LAND SURVEYOR

NOTES:

1. B.L. denotes Building Line, U.E. denotes Utility Easement, S.S.E. denotes Sanitary Sewer Easement, D.E. denotes Drainage Easement, ESM'T. denotes easement, R.O.W. denotes right-of-way, H.C.D.R. denotes Harris County Deed Records, H.C.M.R. denotes Harris County Map Records, H.C.C.F. denotes Harris County Clerk's File, VOL. denotes Volume, PG. denotes Page, P.A.E. denotes Private Access Easement, W.M.E. denotes water meter easement.

2. The Coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD 83) and may be brought to surface by applying the following combined scale of 0.9998968391.

3. This plat lies within the city limits of the City of Houston.

4. There are no pipelines either visible or of record which affect the subject parcel.

5. This plat complies with City Planning Letter issued by Integrity Title Company, effective date January 19, 2006, under Certificate Number 25885. Only existing easements listed in the report are shown hereon.

6. Unless otherwise indicated, the building line (B.L.), whether one or more, shown on this subdivision plat are established to evidence compliance with the applicable provisions of Chapter 42, Code of Ordinances, City of Houston, Texas, in effect at the time this plat was approved, which may be amended form time to time.

7. Dual Building Line note: Any additional structures or additions must adhere to the building line as shown on this plat. In addition, if existing structure(s) is ever demolished, then any replacement structure(s) shall adhere to the building line shown on this plat.

STATE OF TEXAS)

COUNTY OF HARRIS)

We, GREATER TRUE VINE MISSIONARY BAPTIST CHURCH acting by and through Rev. Mathew R. Alix, it's Sr. Pastor and Rev. D.R. Thomas it's Secretary owners hereinafter referred to as Owners of the 0.627 acre tract described in the above and foregoing map as GREATER TRUE VINE MISSIONARY BAPTIST CHURCH, do hereby make and establish said subdivision and development plan of said property according to all lines, dedications, restrictions and notations on said maps or plat and hereby dedicate to the use of the public forever, all streets (except those streets designated as private streets, or permanent access easements), alleys, parks, water courses, drains, easements and public places shown thereon for the purposes and considerations therein expressed; and do hereby bind ourselves, our heirs, successors and assigns to warrant and forever defend the title on the land so dedicated.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11'-6") for ten feet (10'-0") perimeter ground easements or seven feet, six inches (7'-6") for fourteen feet (14'-0") perimeter ground easements or five feet, six inches (5'-6") for sixteen feet (16'-0") perimeter ground easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to and adjoining said public utility easements that are designed with aerial easements (U.E. and A.E.) as indicated and depicted, hereon, whereby the aerial easement totals twenty one feet, six inches (21'-6") in width.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purpose forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10'-0") for ten feet (10'-0") back-to-back ground easements, or eight feet (8'-0") for fourteen feet (14'-0") back-to-back ground easements or seven feet (7'-0") for sixteen feet (16'-0") back-to-back ground easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to both sides and adjoining said public utility easements that are designed with aerial easements (U.E. and A.E.) as indicated and depicted hereon, whereby the aerial easement totals thirty feet (30'-0") in width.

FURTHER, Owners hereby covenant and agree that those streets located within the boundaries of this plat specifically noted as private streets or permanent access easements, shall be hereby established and maintained as private streets or permanent access easements by the owners, heirs, successors and assigns to property located within the boundaries of this plat and always available for the general use of said owners and to the public for firefighters, fire fighting equipment, police emergency vehicles of whatever nature at all times and do hereby bind ourselves, our heirs, successors and established as private streets or permanent access easements.

FURTHER, Owners do hereby covenant and agree that all of the property within the boundaries of this plat is hereby restricted to prevent the drainage of any septic tanks into any public or private street, permanent access easement, road or alley or any drainage ditch, either directly or indirectly.

FURTHER, Owners do hereby dedicate to the public a strip of land fifteen (15) feet wide on each side of the center line of any and all bayous, creeks, gullies, ravines, draws, sloughs, or other natural drainage courses located in said plat, as easements for drainage purposes, giving the City of Houston, Harris County, or any other governmental agency, the right to enter upon said easement at any times for the purpose of construction and maintenance of drainage facilities and structures.

FURTHER, Owners do hereby covenant and agree that all of the property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek or natural drainage way is hereby restricted to keep such drainage ways and easements clear of fences, buildings, planting and other obstructions to the operations and maintenance of the drainage facility and that such abutting property shall not be permitted to drain directly into this easement except by means of an approved drainage structure.

FURTHER, Owners hereby certify that this replat does not attempt to alter, amend, or remove any covenants or restrictions; we further certify that no portion of the preceding plat was limited by deed restriction to residential use for not more that two (2) residential units per lot.

IN TESTIMONY WHEREOF, the GREATER TRUE VINE MISSIONARY, BAPTIST CHURCH has caused these presents to be signed by REV. MATHEW ALIX, SR. PASTOR, thereunto authorized, attested by its SECRETARY Rev. D.R. Thomas this 31 day of March, 2006.

GREATER TRUE VINE MISSIONARY BAPTIST CHURCH

REV. MATHEW R. ALIX
SR. PASTOR

ATTEST: Rev. Donald R. Thomas, Sr.
SECRETARY

State of Texas)

County of Harris)

BEFORE ME, the undersigned authority, on this day personally appeared REV. MATHEW R. ALIX AND Rev. Donald Thomas, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledgement to me that they executed the same for the purposes and considerations therein expressed and in the capacity therein and herein stated, and as the act and deed of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this

31 day of March, 2006.

Julie M Gruller
Notary Public in and for the State of Texas

Julie M Gruller
My Commission Expires
June 14, 2008

My Commission Expires: 6-14-2009

I, Beverly B. Kaufman, Clerk of the County of Harris County, do hereby certify that the within instrument with its certificate of authentication was filed for registration in my office on April 26, 2006, at 1:45 o'clock P.m and duly recorded on April 26, 2006, at 4:21 o'clock P. m, and in Film Code Number 599251 of the Map Records of Harris County for said county.

Witness my hand and seal of office, at Houston, the day and date last above written.

BEVERLY B. KAUFMAN
By: _____
Beverly B. Kaufman
Clerk of the County Court
Harris County, Texas

By: Edwina V. Mack
Deputy EDWINA V. MACK

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.

THIS CERTIFICATE IS VALID ONLY AS TO THE INSTRUMENT ON WHICH THE ORIGINAL SIGNATURE IS AFFIXED AND ONLY THEN TO THE EXTENT THAT SUCH INSTRUMENT IS NOT ALTERED OR CHANGED AFTER RECORDING.

This is to certify that the Houston Planning Commission of the City of Houston, Texas, has approved this plat and subdivision of GREATER TRUE VINE MISSIONARY BAPTIST CHURCH in conformance with the laws of the State of Texas and the ordinances of the City of Houston as shown hereon and authorized the recording of this plat

this 14 day of April, 2006

By: Carol Alvé Lewis
Carol A. Lewis, Ph.D
Chair or Mark A. Kilkenny, Vice Chairman

By: Marlene L. Gafrick
Marlene L. Gafrick
Secretary

OFFICE OF
BEVERLY B. KAUFMAN
COUNTY CLERK, HARRIS COUNTY, TEXAS

MAP RECORDS OF COUNTY CLERK

599251
FILM CODE

GREATER TRUE VINE MISSIONARY
BAPTIST CHURCH

THIS IS PAGE 1 OF 2 PAGES

REDUCTION 24X CAMERA DESIGNATION MRG1

KEY MAP

GREATER TRUE VINE MISSIONARY BAPTIST CHURCH

A SUBDIVISION OF 0.627 ACRES
HARRIS & WILSON LEAGUE
LOCATED IN THE
CITY OF HOUSTON
HARRIS COUNTY, TEXAS

PARTIAL REPLAT OF
LOTS 2, 11, & 12, BLOCK 1 &
LOTS 5, 6, 7, 8, 9, AND THE
SOUTH 20 FEET OF LOT 4,
BLOCK 8
FAIRGROUND PARK ADDITION
VOL. 81, PG. 460, H.C.D.R.

REASON FOR REPLAT:
TO CREATE TWO RESERVES OUT OF
MULTIPLE LOTS

2 BLOCKS 2 RESERVES
SCALE: 1" = 30' MARCH 2006

OWNERS:
GREATER TRUE VINE MISSIONARY
BAPTIST CHURCH
3010 FONTINOT ST.
HOUSTON, TEXAS 77026

SURVEYOR:
RENO & ASSOCIATES
PROFESSIONAL LAND SURVEYING
14535 OLD KATY RD., SUITE 202
HOUSTON, TEXAS 77079
281.497.5476

JOB. No. 45-0601

RECORDER'S MEMORANDUM:
At the time of recordation, this instrument was found to be inadequate for the best photographic reproduction because of illegibility, carbon or photo copy, discolored paper, etc. All blackouts, additions and changes were present at the time the instrument was filed and recorded.

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBITS "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 84

HCAD ID - 1280850020001

Restrictive Covenant

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Reserve "A" in Block One (2) of Greater True Vine Missionary Baptist Church, a subdivision in Harris County, Texas according to the map or plat thereof, recorded film code # 599251, of the map records of Harris County, Texas..

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Greater True Vine Missionary Baptist Church (Owner) with an address of 3010 Fontinot, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 19th day of February, 2015.

Greater True Vine Baptist Church
By: _____
Name: Matthew R. Alix Sr., Pastor

STATE OF TEXAS

HARRIS COUNTY

BEFORE ME, on this the 17th day of February, 2015, personally appeared Matthew R. Alix, Sr., Pastor, of [Greater True Vine Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of February, 2015.

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: 12/11/2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

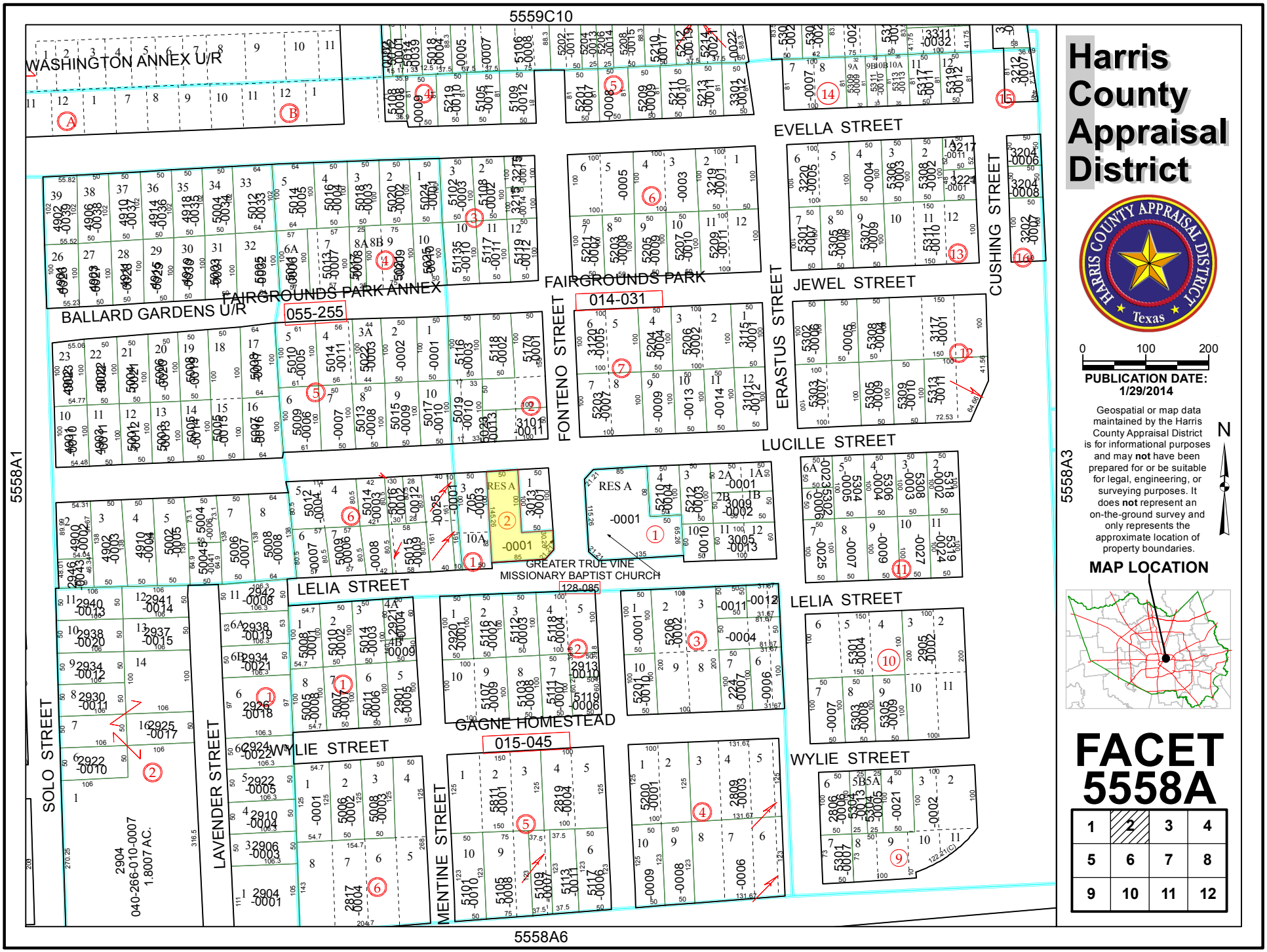
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

Texas American Title Company
2000 Bering, Suite 1000
Houston, Texas 77057
713-988-9999

Title Report

GF Number: 7910-13-0329
Date: January 16, 2013

Texas American Title Company ("Title Company") certifies that a diligent search of the real property records of Texas American Title Company's title plant has been made, as to the herein described property, and as of 8:00 AM on the 9th day of January, 2013, we find the following:

Title Vested In:

True Vine Baptist Church, a/k/a True Vine Missionary Baptist Church, a/k/a Greater True Vine Baptist Church, a/k/a Greater True Vine Missionary Baptist Church (by Deeds filed for record under Volume 1285, Page 139 and Volume 1656, Page 572 of the Deed Records and under Clerk's File Nos. P517012, S874736, T009320, T924667 and X213261, all of Harris County, Texas)

Property Description: (Map ID# 84) (Tax ID# 128-085-002-0001)

Reserve "A", in Block Two (2), of Greater True Vine Missionary Baptist Church, a subdivision in Harris County, Texas according to the map or plat thereof, recorded under Film Code No. 599251 of the Map Records of Harris County, Texas.

SUBJECT TO: Claims of present occupants; discrepancies in area and boundaries; unpaid bills for Labor or Material in connection with recent repairs or new improvements; Unpaid Taxes; changes in Marital or Corporate Status of owner(s) since date of purchase; Homestead Rights or Claims.

Restrictions:

Those as set forth by instrument(s) filed for record under Film Code No. 599251 of the Map Records of Harris County, Texas.

Exceptions:

a) Building set-back line 10 feet in width along the south and east property line(s), as shown by the recorded plat of said subdivision.

b) Drainage easement 15 feet in width on each side of the centerlines of all natural drainage courses as shown by the recorded plat of said subdivision.

c) Subject property is located within the City of Houston or within its extra territorial jurisdiction (within 5 miles of the city limits but outside another municipality) and is subject to the terms, conditions, and provision of City of Houston Ordinance No. 85-1878 and 99-262, pertaining to, among other things the platting and re-platting of real property and to the establishment of building lines. A certified copy of said ordinance was filed of record on August 1, 1991, under Harris County Clerk's File No. N253886.

Property Liens:

1) Deed of Trust dated April 18, 2007, filed for record on April 19, 2007, under County Clerk's File No. 20070237684, in the office of the County Clerk of Harris County, Texas, executed by Greater True Vine Missionary Baptist Church, in favor of David B. Terry, as Trustee, securing the obligations as set out in that certain promissory note of even date therewith in the principal amount of $300,000.00, payable to the order of Comerica Bank, and subject to all terms, conditions and stipulations contained therein; including any additional indebtedness secured thereby.

Involuntary Liens:

None of record.

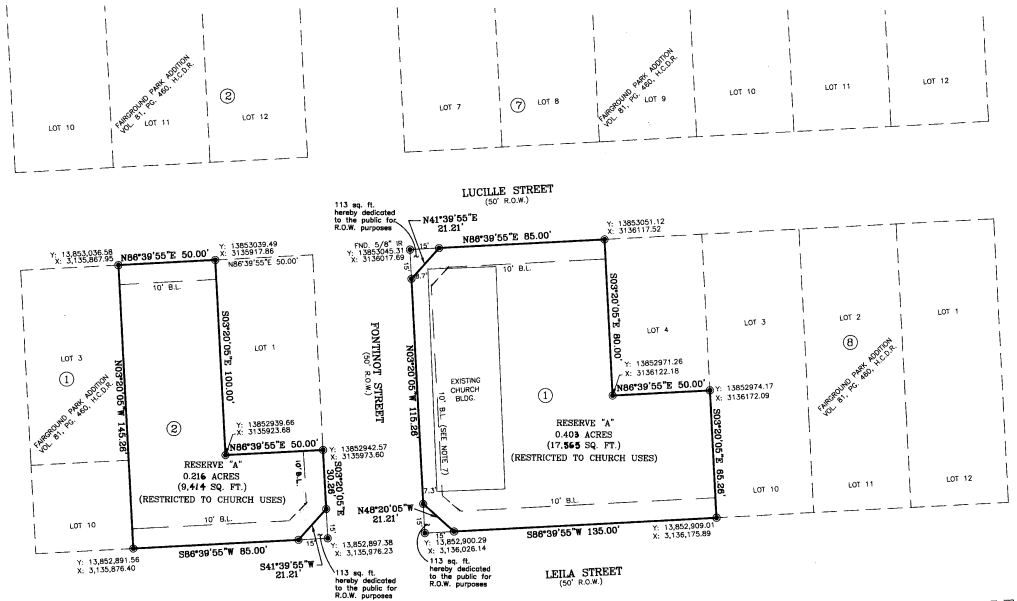
CAUTION: PROTECTION IS AFFORDED ONLY UNDER THE TERMS OF THE PROPOSED TITLE INSURANCE POLICY. TEXAS AMERICAN TITLE COMPANY (AND ITS UNDERWRITERS OF TITLE INSURANCE) ASSUME NO LIABILITY FOR ERRORS OR OMISSIONS IN HIS REPORT OR FOR VERBAL STATEMENTS.

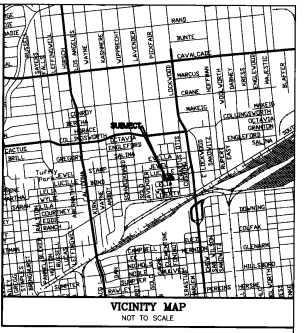
This is a copy of a preliminary report made for the use of Texas American Title Company only, to determine whether a title insurance policy can be issued. If a copy is furnished to the parties to the transaction, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the results of the Company's title search (upon which only the Company may rely.) None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company should not be liable by reason of furnishing this report or for any verbal statements related thereto. Neither the Company nor its underwriters shall be liable for any title defect unless a title insurance policy is issued by the Company insuring against such defect, and the applicable premium paid therefore. The liability shall then exist only under the terms of the policy (as prescribed by the State Board of Insurance of the State of Texas) and as measured and limited thereby.

Notice: Texas American Title Company disclaims any warranties, expressed or implied, concerning this information. This information is solely for the use of the party requesting it and no one else. Texas American Title Company liability for errors and/or omissions in this information shall be limited to the amount paid for this report. By accepting this form the party requesting the information agrees that the disclaimer of warranties, and liability limitation contained in this paragraph is a part of its contract with Texas American Title Company and shall cover all actions whether arising hereunder by statue, in contract, or in tort.

Texas American Title Company

Darrell Stone
Title Examiner





2754179
04/26/06 20123439
$60.00

30 15 0 30 60 90

● = SET 3/4" IR W/CAP, UNLESS OTHERWISE NOTED

I, Kenneth A. Gruller, R.P.L.S., am registered under the laws of the State of Texas to practice the profession of surveying and hereby certify that the above subdivision is true and correct; was prepared from an actual survey of the property made under my supervision on the ground; that all boundary corners, angle points, points of curvature and other points of reference have been marked with iron (or other suitable permanent metal) pipes or rods have an outside diameter of not less than three quarter (3/4) inch and a length of not less than three (3) feet; and that the plat boundary corners have been tied to the Texas State Plane Coordinate NAD83 Projections.

05-30-2006

Kenneth A. Gruller, R.P.L.S.
Texas Registration No. 5476

STATE OF TEXAS
REGISTERED
KENNETH A. GRULLER
5476
PROFESSIONAL
LAND SURVEYOR

NOTES:

1. B.L. denotes Building Line, U.E. denotes Utility Easement, S.S.E. denotes Sanitary Sewer Easement, D.E. denotes Drainage Easement, ESM'T. denotes easement, R.O.W. denotes right-of-way, H.C.D.R. denotes Harris County Deed Records, H.C.M.R. denotes Harris County Map Records, H.C.C.F. denotes Harris County Clerk's File, VOL. denotes Volume, PG. denotes Page, P.A.E. denotes Private Access Easement, W.M.E. denotes water meter easement.

2. The Coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD 83) and may be brought to surface by applying the following combined scale of 0.9998968391.

3. This plat lies within the city limits of the City of Houston.

4. There are no pipelines either visible or of record which affect the subject parcel.

5. This plat complies with City Planning Letter issued by Integrity Title Company, effective date January 19, 2006, under Certificate Number 25885. Only existing easements listed in the report are shown hereon.

6. Unless otherwise indicated, the building line (B.L.), whether one or more, shown on this subdivision plat are established to evidence compliance with the applicable provisions of Chapter 42, Code of Ordinances, City of Houston, Texas, in effect at the time this plat was approved, which may be amended form time to time.

7. Dual Building Line note: Any additional structures or additions must adhere to the building line as shown on this plat. In addition, if existing structure(s) is ever demolished, then any replacement structure(s) shall adhere to the building line shown on this plat.

STATE OF TEXAS)

COUNTY OF HARRIS)

We, GREATER TRUE VINE MISSIONARY BAPTIST CHURCH acting by and through Rev. Mathew R. Alix, it's Sr. Pastor and Rev. D.R. Thomas it's Secretary owners hereinafter referred to as Owners of the 0.627 acre tract described in the above and foregoing map as GREATER TRUE VINE MISSIONARY BAPTIST CHURCH, do hereby make and establish said subdivision and development plan of said property according to all lines, dedications, restrictions and notations on said maps or plat and hereby dedicate to the use of the public forever, all streets (except those streets designated as private streets, or permanent access easements), alleys, parks, water courses, drains, easements and public places shown thereon for the purposes and considerations therein expressed; and do hereby bind ourselves, our heirs, successors and assigns to warrant and forever defend the title on the land so dedicated.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11'-6") for ten feet (10'-0") perimeter ground easements or seven feet, six inches (7'-6") for fourteen feet (14'-0") perimeter ground easements or five feet, six inches (5'-6") for sixteen feet (16'-0") perimeter ground easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to and adjoining said public utility easements that are designed with aerial easements (U.E. and A.E.) as indicated and depicted, hereon, whereby the aerial easement totals twenty one feet, six inches (21'-6") in width.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purpose forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10'-0") for ten feet (10'-0") back-to-back ground easements, or eight feet (8'-0") for fourteen feet (14'-0") back-to-back ground easements or seven feet (7'-0") for sixteen feet (16'-0") back-to-back ground easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to both sides and adjoining said public utility easements that are designed with aerial easements (U.E. and A.E.) as indicated and depicted hereon, whereby the aerial easement totals thirty feet (30'-0") in width.

FURTHER, Owners hereby covenant and agree that those streets located within the boundaries of this plat specifically noted as private streets or permanent access easements, shall be hereby established and maintained as private streets or permanent access easements by the owners, heirs, successors and assigns to property located within the boundaries of this plat and always available for the general use of said owners and to the public for firefighters, fire fighting equipment, police emergency vehicles of whatever nature at all times and do hereby bind ourselves, our heirs, successors and established as private streets or permanent access easements.

FURTHER, Owners do hereby covenant and agree that all of the property within the boundaries of this plat is hereby restricted to prevent the drainage of any septic tanks into any public or private street, permanent access easement, road or alley or any drainage ditch, either directly or indirectly.

FURTHER, Owners do hereby dedicate to the public a strip of land fifteen (15) feet wide on each side of the center line of any and all bayous, creeks, gullies, ravines, draws, sloughs, or other natural drainage courses located in said plat, as easements for drainage purposes, giving the City of Houston, Harris County, or any other governmental agency, the right to enter upon said easement at any times for the purpose of construction and maintenance of drainage facilities and structures.

FURTHER, Owners do hereby covenant and agree that all of the property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek or natural drainage way is hereby restricted to keep such drainage ways and easements clear of fences, buildings, planting and other obstructions to the operations and maintenance of the drainage facility and that such abutting property shall not be permitted to drain directly into this easement except by means of an approved drainage structure.

FURTHER, Owners hereby certify that this replat does not attempt to alter, amend, or remove any covenants or restrictions; we further certify that no portion of the preceding plat was limited by deed restriction to residential use for not more that two (2) residential units per lot.

IN TESTIMONY WHEREOF, the GREATER TRUE VINE MISSIONARY, BAPTIST CHURCH has caused these presents to be signed by REV. MATHEW ALIX, SR. PASTOR, thereunto authorized, attested by its SECRETARY Rev. D.R. Thomas this 31 day of March, 2006.

GREATER TRUE VINE MISSIONARY BAPTIST CHURCH

REV. MATHEW R. ALIX
SR. PASTOR

ATTEST: Rev. Donald R. Thomas, Sr.
SECRETARY

State of Texas)

County of Harris)

BEFORE ME, the undersigned authority, on this day personally appeared REV. MATHEW R. ALIX AND Rev. Donald Thomas, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledgement to me that they executed the same for the purposes and considerations therein expressed and in the capacity therein and herein stated, and as the act and deed of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this

31 day of March, 2006.

Julie M Gruller
Notary Public in and for the State of Texas

Julie M Gruller
My Commission Expires
June 14, 2008

My Commission Expires: 6-14-2009

I, Beverly B. Kaufman, Clerk of the County of Harris County, do hereby certify that the within instrument with its certificate of authentication was filed for registration in my office on April 26, 2006, at 1:45 o'clock P.m and duly recorded on April 26, 2006, at 4:21 o'clock P. m, and in Film Code Number 599251 of the Map Records of Harris County for said county.

Witness my hand and seal of office, at Houston, the day and date last above written.

BEVERLY B. KAUFMAN
By: _____
Beverly B. Kaufman
Clerk of the County Court
Harris County, Texas

By: Edwina V. Mack
Deputy EDWINA V. MACK

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.

THIS CERTIFICATE IS VALID ONLY AS TO THE INSTRUMENT ON WHICH THE ORIGINAL SIGNATURE IS AFFIXED AND ONLY THEN TO THE EXTENT THAT SUCH INSTRUMENT IS NOT ALTERED OR CHANGED AFTER RECORDING.

This is to certify that the Houston Planning Commission of the City of Houston, Texas, has approved this plat and subdivision of GREATER TRUE VINE MISSIONARY BAPTIST CHURCH in conformance with the laws of the State of Texas and the ordinances of the City of Houston as shown hereon and authorized the recording of this plat

this 14 day of April, 2006

By: Carol Alvé Lewis
Carol A. Lewis, Ph.D
Chair or Mark A. Kilkenny, Vice Chairman

By: Marlene L. Gafrick
Marlene L. Gafrick
Secretary

OFFICE OF
BEVERLY B. KAUFMAN
COUNTY CLERK, HARRIS COUNTY, TEXAS

MAP RECORDS OF COUNTY CLERK

599251
FILM CODE

GREATER TRUE VINE MISSIONARY
BAPTIST CHURCH

THIS IS PAGE 1 OF 2 PAGES

REDUCTION 24X CAMERA DESIGNATION MRG1

KEY MAP

GREATER TRUE VINE MISSIONARY BAPTIST CHURCH

A SUBDIVISION OF 0.627 ACRES
HARRIS & WILSON LEAGUE
LOCATED IN THE
CITY OF HOUSTON
HARRIS COUNTY, TEXAS

PARTIAL REPLAT OF
LOTS 2, 11, & 12, BLOCK 1 &
LOTS 5, 6, 7, 8, 9, AND THE
SOUTH 20 FEET OF LOT 4,
BLOCK 8
FAIRGROUND PARK ADDITION
VOL. 81, PG. 460, H.C.D.R.

REASON FOR REPLAT:
TO CREATE TWO RESERVES OUT OF
MULTIPLE LOTS

2 BLOCKS 2 RESERVES
SCALE: 1" = 30' MARCH 2006

OWNERS:
GREATER TRUE VINE MISSIONARY
BAPTIST CHURCH
3010 FONTINOT ST.
HOUSTON, TEXAS 77026

SURVEYOR:
RENO & ASSOCIATES
PROFESSIONAL LAND SURVEYING
14535 OLD KATY RD., SUITE 202
HOUSTON, TEXAS 77079
281.497.5476

JOB. No. 45-0601

RECORDER'S MEMORANDUM:
At the time of recordation, this instrument was found to be inadequate for the best photographic reproduction because of illegibility, carbon or photo copy, discolored paper, etc. All blackouts, additions and changes were present at the time the instrument was filed and recorded.

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 85

HCAD ID - 0402660010007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5006 Lucille St, Houston,TX 77026 (Map ID 85, HCAD ID 0402660010007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[67]				Property Ownership		Anticipated Filing Date[68]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[67] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[68] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot seven of Ballard Gardens, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Eine Barrientos with an address of 5006 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: Eine barrientos
Name: Eine Barrientos

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Eine Barrientos, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

NOTARY PUBLIC STATE OF TEXAS
A SHANKLIN
Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

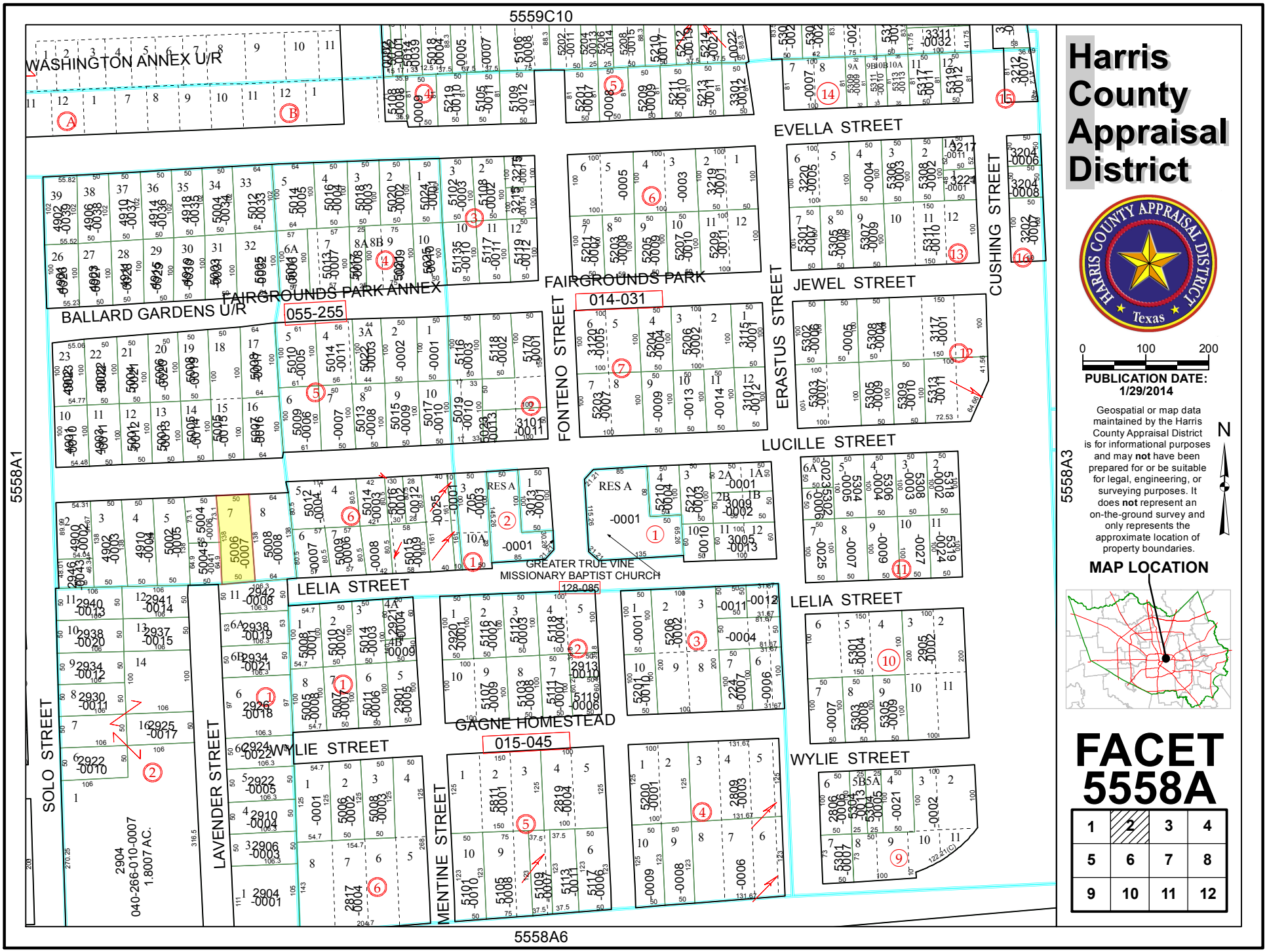
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY
1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5006 Lucile St

We have checked the records on the following property up through and including October 14, 2014, and find as follows:

PROPERTY:

Lot 7 of Ballard Gardens, a subdivision out of the Harris and Wilson Survey in Harris County, Texas, as per plat thereof recorded in Volume 1528, Page 725 of the Deed Records of Harris County, Texas, being more particularly described by metes and bounds attached hereto.

TITLE VESTED IN:

Eine Barrientos by virtue of Deed filed for record under Harris County Clerk's File No. Y038108. (See requirement below)

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC.:

None of record.

NOTE: The record owner acquired title to the subject property by Deed filed for record under Harris County Clerk's File No. Y038108, executed by Calvin Norton, Dorothy Norton Bell, Millie Norton Rawls, Clifton Norton and Fedrick D. Norton, Individually and as heirs of the Estate of R. L. Norton, Deceased, and Kerry Norton, Wadrick Norton, Craig Norton, Gregory Norton, Debra Norton, Ida Marie Norton, Individually and as heirs to the Estate of Robert L. Norton, Jr., Deceased. We are unable to locate an Affidavit of Heirship or Probated Will on either R. L. Norton, Deceased or Robert L. Norton, Jr., Deceased. Therefore, proof of their death and heirship must be obtained and filed in the Office of the County Clerk of Harris County, Texas.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PRELIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title research (upon which only the Company may rely). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or for any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

WITNESS Our Hand this 22nd day of October, 2014.

STARTEX TITLE COMPANY

By: Patsy Hannah

Patsy Hannah
Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-26A
MW-33BR
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 86

HCAD ID - 0402660010008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5008 Lucille St, Houston,TX 77026 (Map ID 86, HCAD ID 0402660010008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[69]				Property Ownership		Anticipated Filing Date[70]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[69] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[70] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot 8 of Ballard Gardens, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Trustees of Norton's Temple COGIC (Owner) with an address of 5008 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 13TH day of June, 2015.

Norton Temple COGIC
By: Charles D. Hill
Name: CHARLES H.11, PASTOR

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 13th day of June, 2015, personally appeared CHARLES H.11, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 13TH day of June, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHERMAN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

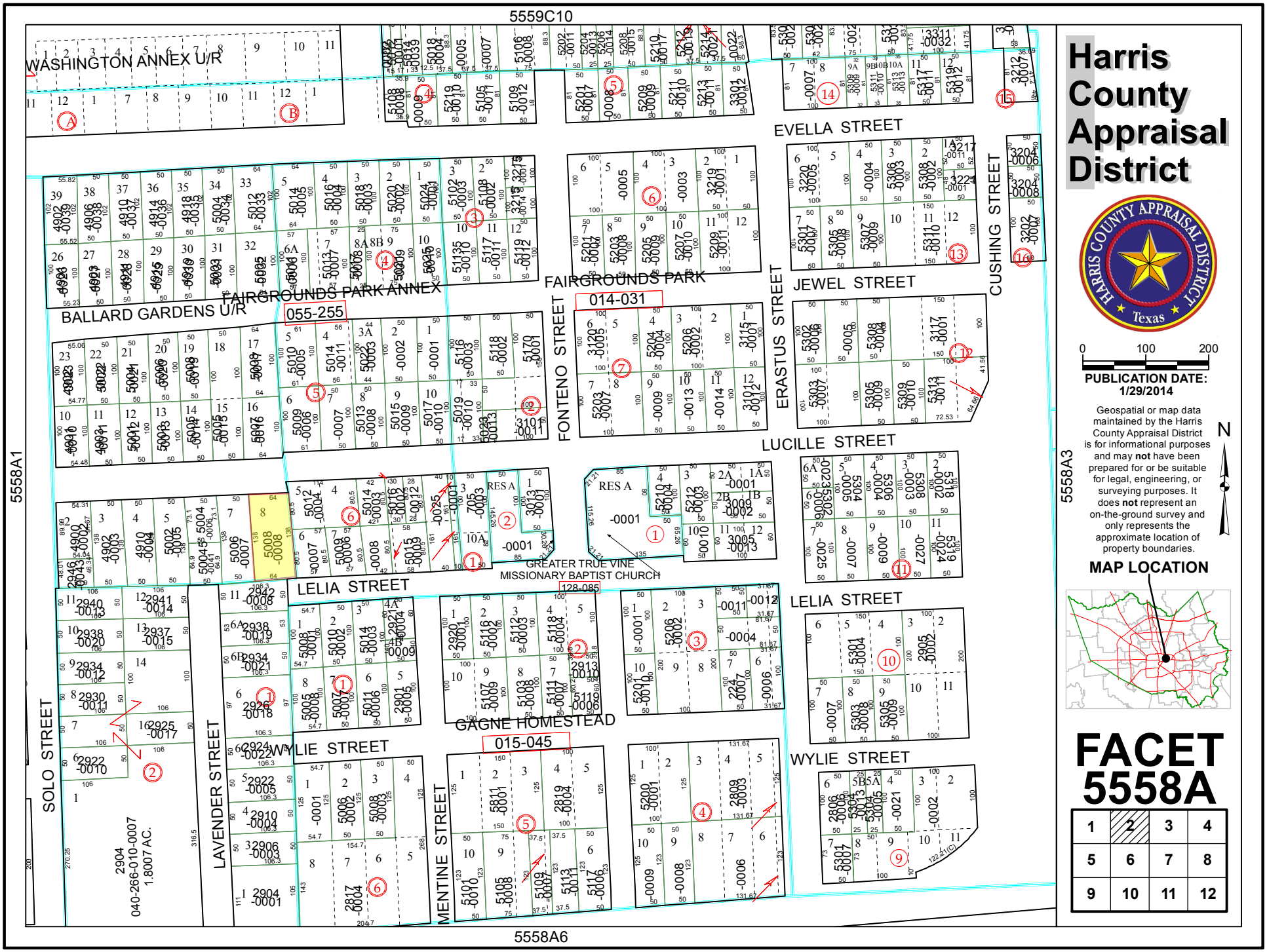
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY
1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5008 Lucile St

We have checked the records on the following property up through and including October 14, 2014, and find as follows:

PROPERTY:

Lot 8 of Ballard Gardens, a subdivision out of the Harris and Wilson Survey in Harris County, Texas, as per plat thereof recorded in Volume 1528, Page 725 of the Deed Records of Harris County, Texas, being more particularly described by metes and bounds attached hereto.

TITLE VESTED IN:

Trustees of Norton's Temple Church of God in Christ, Inc. by virtue of Deed recorded in Volume 3126, Page 638 of the Deed Records of Harris County, Texas.

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC.:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PRELIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title research (upon which only the Company may rely). None of the information contained herein, or the absence of other information, constitutes a representation to any party,

other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or for any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

WITNESS Our Hand this 21st day of October, 2014.

STARTEX TITLE COMPANY

By: Patsy Hannah

Patsy Hannah
Examiner

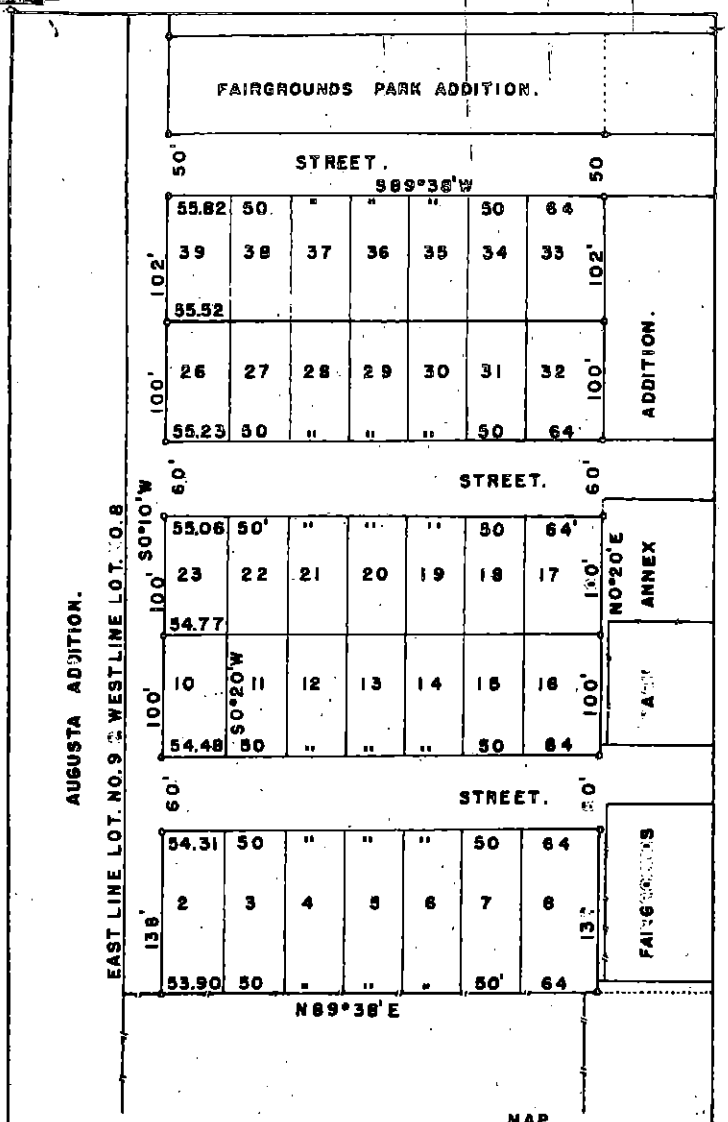
EXHIBIT "A"

Lot Eight (8), of BALLARD GARDENS, a subdivision out of the Harris and Wilson Survey in Harris County, Texas, as per plat thereof recorded in Volume 1528, Page 725, of the Deed Records of Harris County, Texas, more particularly described by metes and bounds as follows:

BEGINNING at the Southwest corner of a 6 acre tract of land, as described in Deed from Lucy B. Holmes to L. W. Inkley recorded in Volume 1277, Page 727, of the Deed Records of Harris County, Texas, in the West line of Lot 8, of the Second Tier of the Harris & Wilson Two League Grant which point is located a distance of 1349 feet North of the intersection of the West line of said Lot 8, and the center line of the T. & N. O RR; THENCE North 89 degrees, 38 minutes East a distance of 333.90 feet to point for corner; and being the beginning point of the tract herein described, and also being the Southwest corner of the tract herein described; THENCE North 0 degrees 20 minutes East a distance of 138 feet to point for corner; and being the Northwest corner of the tract herein described, and also being in the South boundary line of a 60 ft. Street; THENCE North 89 degrees, 38 minutes East along the South boundary line of said 60 ft. street a distance of 64 feet to point for corner; THENCE South 0 degrees, 20 minutes West a distance of 138 feet to a point for corner; and being the Southeast corner of the tract herein described; THENCE South 89 degrees, 38 minutes West to the PLACE OF BEGINNING.

Vol- 1528-727

727



MAP
SHOWING SURVEY OF BALLARD GARDENS ADDITION. A SUBDIVISION OF THE LUCY B. HOLMES. 6 ACRES. OUT OF LOT. 8 UPPER TIER. N.S.B.B. HARRIS & WILSON SURVEY. FOR L.M. INKLEY. DATE 5-31-43. SCALE 1"=100' VOL. 07. PG. 103 OFFICE OF J. S. BOYLES. C.E. HOUSTON TEXAS.

MAP NO. 4730

Filed for record Nov 27, 1946 at 9:35 o'clock A.M.
Recorded Aug. 6, 1947 at 1:58 o'clock P.M.
[illegible] County, Texas.
By Jennie Bracy

Title Data, Inc. RA TDI32425 HA D15280725.001

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 87

HCAD ID - 0522570000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lucile, Houston,TX 77026 (Map ID 87, HCAD ID 0522570000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[71]				Property Ownership		Anticipated Filing Date[72]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[71] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[72] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lots Four (4) and Five (5) in Block Six (6) of Fairgrounds Park Annex, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Trustees of Norton's Temple COGIC (Owner) with an address of 5008 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 13TH day of June, 2015.

Norton Temple COGIC
By: Charles D. Hill
Name: CHARLES HILL, PASTOR

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 13th day of June, 2015, personally appeared CHARLES HILL, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 13TH day of June, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHANKLIN
My Commission Expires
December 11, 2016

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

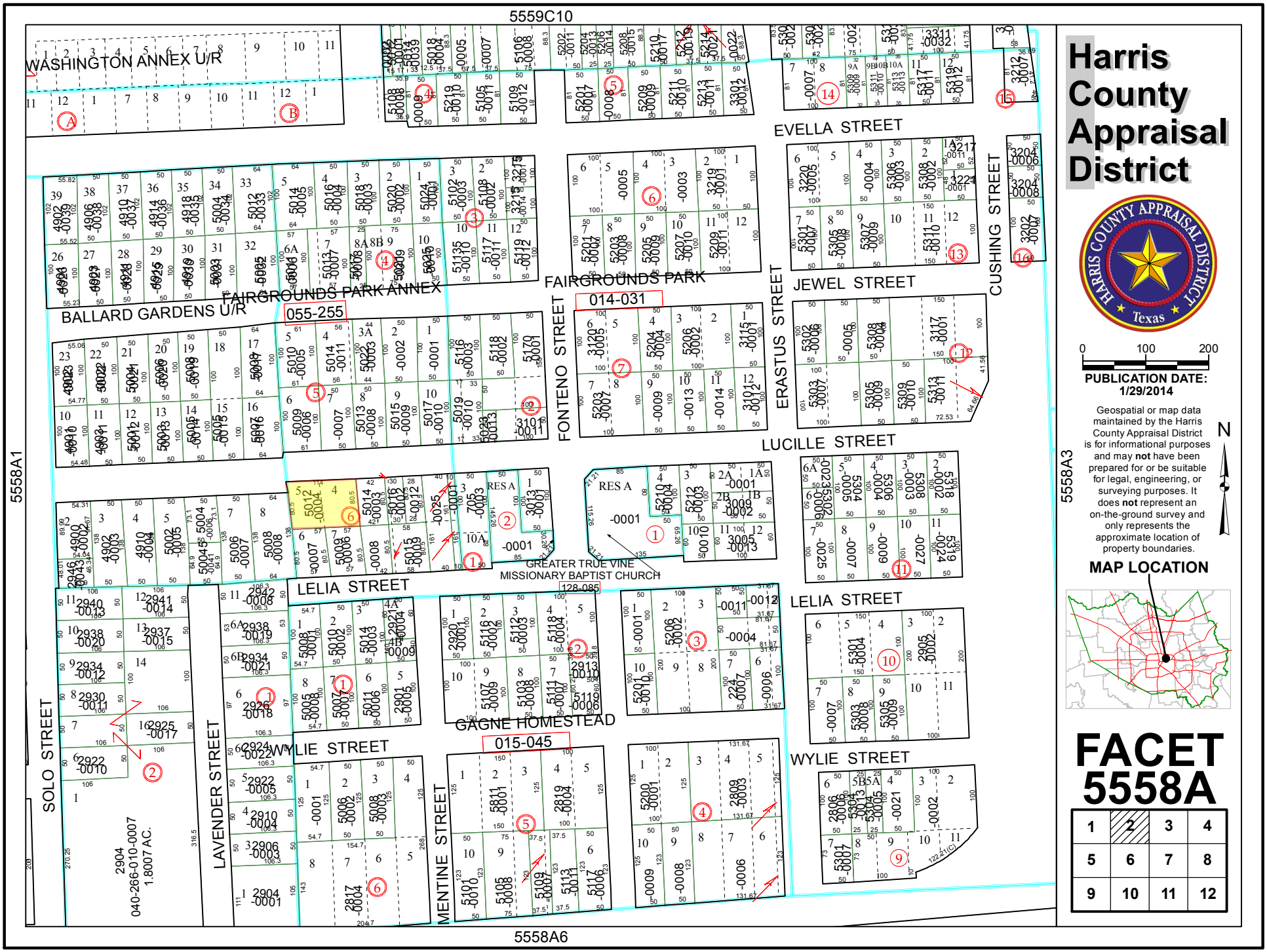
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY
1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
0 Lucille St.

We have checked the records on the following property up through and including October 14, 2014, and find as follows:

PROPERTY:

Lots Four (4) and Five (5), in Block Six (6), of Fairgrounds Park Annex, an addition in Harris County, Texas, according to the map or plat thereof recorded in Volume 499, Page 70, of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Norton's Temple Church of God In Christ by virtue of Deeds filed for record under Harris County Clerk's File No(s). D537788 and D537789.

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC.:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PRELIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title research (upon which only the Company may rely). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report

or for any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

WITNESS Our Hand this 21st day of October, 2014.

STARTEX TITLE COMPANY

By: _____
Patsy Hannah
Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 88

HCAD ID - 0522570000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5014 Lucille St, Houston,TX 77026 (Map ID 88, HCAD ID 0522570000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[73]				Property Ownership		Anticipated Filing Date[74]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[73] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[74] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The North 42 feet by 80 feet of the West part of Lot 3, in Block 6, of Fairgrounds Park Annex, an addition in Harris County, Texas according to the map or plat therof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Catherine Hall Lawrence (Owner) with an address of 5014 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 29 day of April, 2015.

[OWNER]
By: Catherine Lawrence
Name: Catherine Hall Lawrence

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _____ day of April, 2015, personally appeared Catherine Hall Lawrence, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 29 day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires: _____

PAUL A SHAMLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

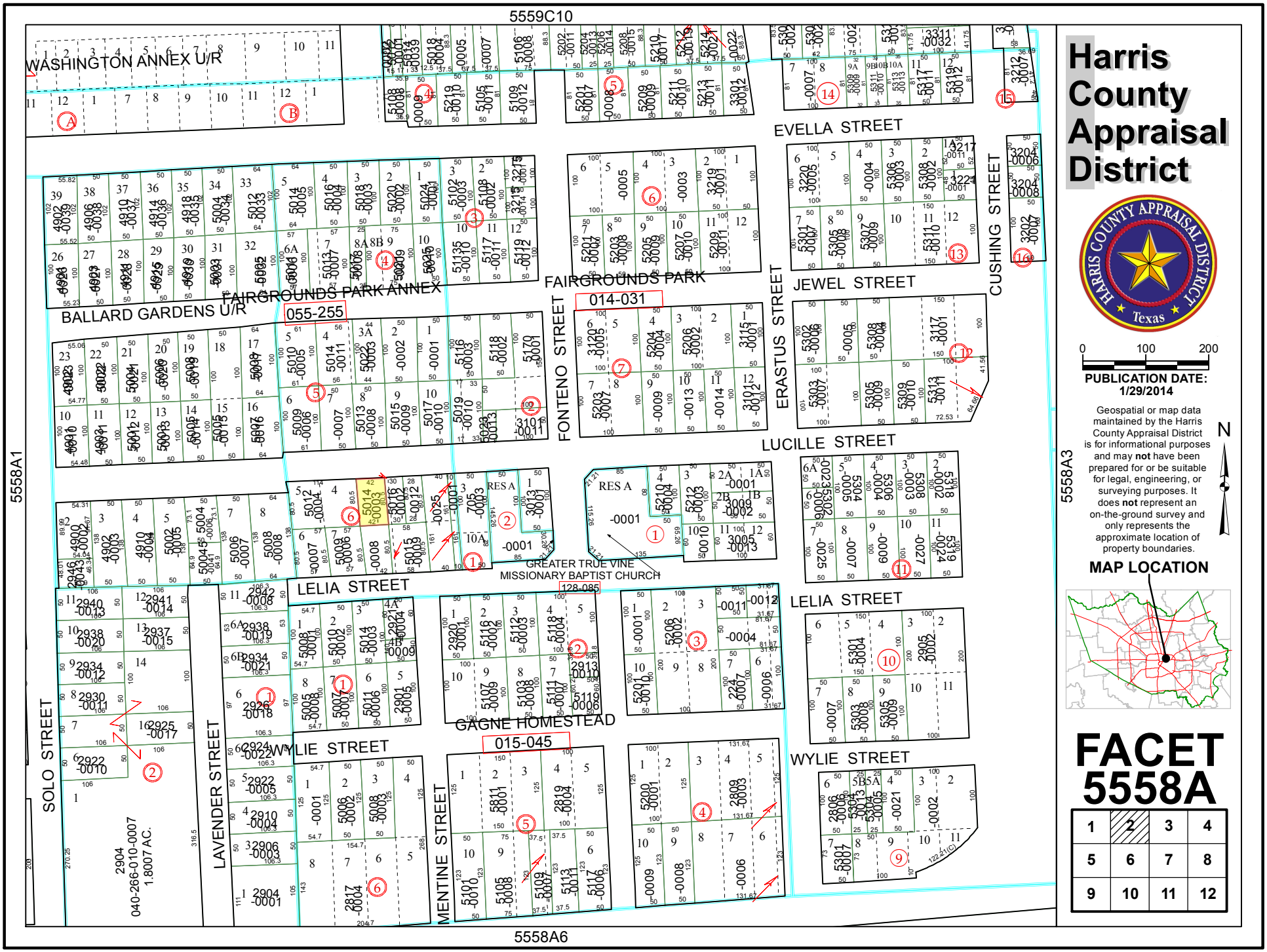
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY
1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5014 Lucille St.

We have checked the records on the following property up through and including October 14, 2014, and find as follows:

PROPERTY:

The North 42 feet by 80 feet of the West part of Lot 3, in Block 6, of Fairgrounds Park Annex, an addition in Harris County, Texas, according to the map or plat thereof recorded in Volume 499, Page 70, of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Catherine Hall Lawrence by virtue of Deeds filed for record under Harris County Clerk's File No(s). P604573, P604574, P604575 and P604576, and Judgment Declaring Heirship of the Estate of Nellie Hall, Deceased, a copy of which is recorded under Harris County Clerk's File No. P573100.

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC.:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PRELIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title research (upon which only the Company may rely). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist

which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or for any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

WITNESS, Our Hand this 21st day of October, 2014.

STARTEX TITLE COMPANY

By: Patsy Hannah
Patsy Hannah
Examiner

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 91

HCAD ID - 0522560000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5015 Lucille St, Houston,TX 77026 (Map ID 91, HCAD ID 0522560000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[79]				Property Ownership		Anticipated Filing Date[80]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[79] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[80] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Nine (9) of Block Five (5) of Fairground Park addition 8, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Verna Cormier Harrison Heir and devisee of Anton Cormier (Owner) with an address of 5017 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 29 day of April, 2015.

By: Verna Cormier
Name: Verna Cormier Harrison

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 29 day of April, 2015, personally appeared Verna Cormier Harrison, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 29 day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

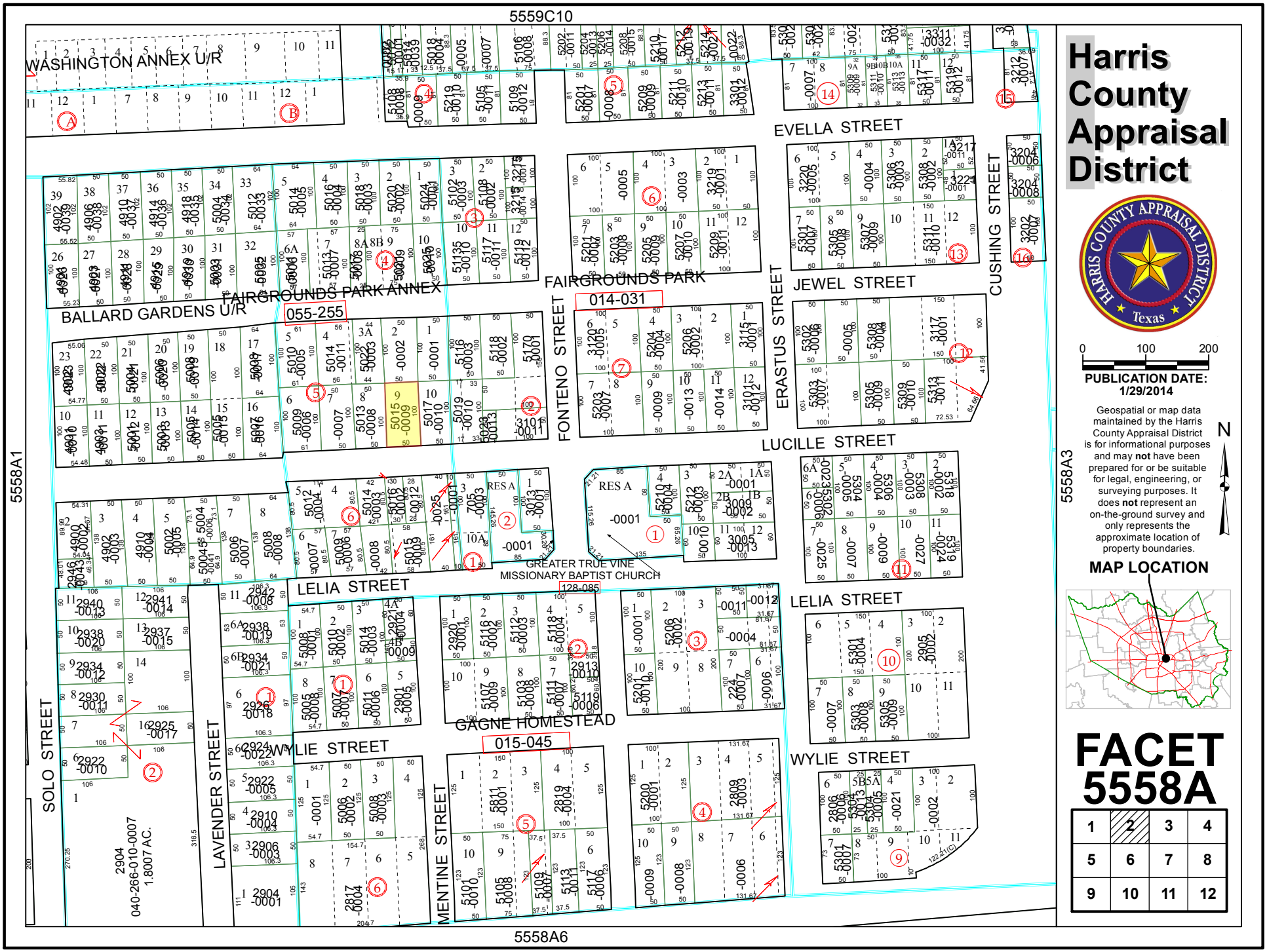
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY

1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5015 Lucille St. (4504O&E)

We have checked the records on the following property up through and including November 25, 2014, and find as follows:

PROPERTY:

Lot Nine (9) in Block Five (5), of Fairground Park, an addition to the City of Houston, Harris County, Texas, according to the map thereof recorded in Volume 81, Page 461 of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Anton Cormier by virtue of Deed filed for record under Harris County Clerk's File No. F371182.

LIENS:

Notice of Lien dated May 12, 1987, filed for record under Harris County Clerk's File No(s). L192056, by the City of Houston, Texas, in the amount of $1,294.63.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PREMLIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title search (upon which on the Company may reply). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

STARTEX TITLE COMPANY:

BY: Paige Ervin

Paige Ervin – Customer Service

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 92

HCAD ID - 0522560000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5017 Lucille St, Houston,TX 77026 (Map ID 92, HCAD ID 0522560000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[81]				Property Ownership		Anticipated Filing Date[82]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[81] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[82] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Ten (10) of Block Five (5) of Fairground Park addition 8, a subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Verna Cormier Harrison Heir and devisee of Joseph and Lillie Cormier (Owner) with an address of 5017 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 29 day of April, 2015.

By: _____
Name: Verna Cormier Harrison

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 29 day of April, 2015, personally appeared Verna Cormier Harrison, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 29 day of April, 2015.

_____
Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

PAULA SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

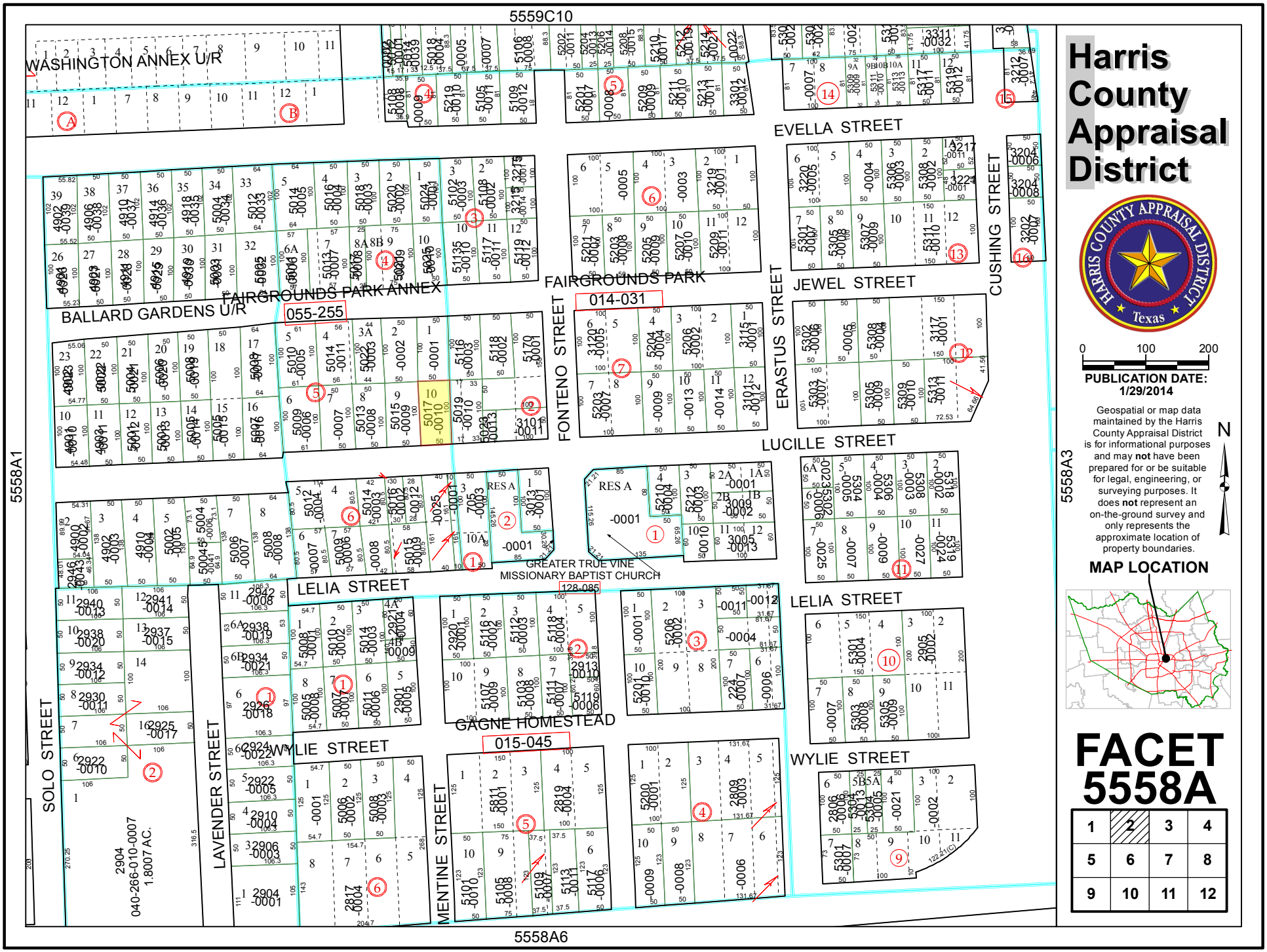
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY

1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5017 Lucille St. (4505O&E)

We have checked the records on the following property up through and including November 25, 2014, and find as follows:

PROPERTY:

Lot Ten (10) of Block Five (5) of Fairground Park Addition, an addition in Harris County, Texas, according to the map thereof recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Joseph and Lillie Cormier

LIENS:

Notice of Lien dated December 31, 1982, filed for record under Harris County Clerk's File No(s). H781491, by the City of Houston, Texas, in the amount of $111.66.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PREMLIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title search (upon which on the Company may reply). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

STARTEX TITLE COMPANY:

BY: _____

Paige Ervin – Customer Service

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 94

HCAD ID - 0140340000013

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5023 Lucille St, Houston,TX 77026 (Map ID 94, HCAD ID 0140340000013)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[85]				Property Ownership		Anticipated Filing Date[86]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[85] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[86] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The West Twenty-five (W-25'), of the South one-half (S ½)of Lot Eleven (11) of Block Two (2) of fairground Park Addition, an addition in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Leticia Serna and Jose A. Martinez (Owner) with an address of 5023 Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 8 day of July, 2015.

By: Leticia Serna
Name: Leticia Serna

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _____ day of April, 2015, personally appeared Leticia Serna, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 8 day of July, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires

PAUL A SHANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

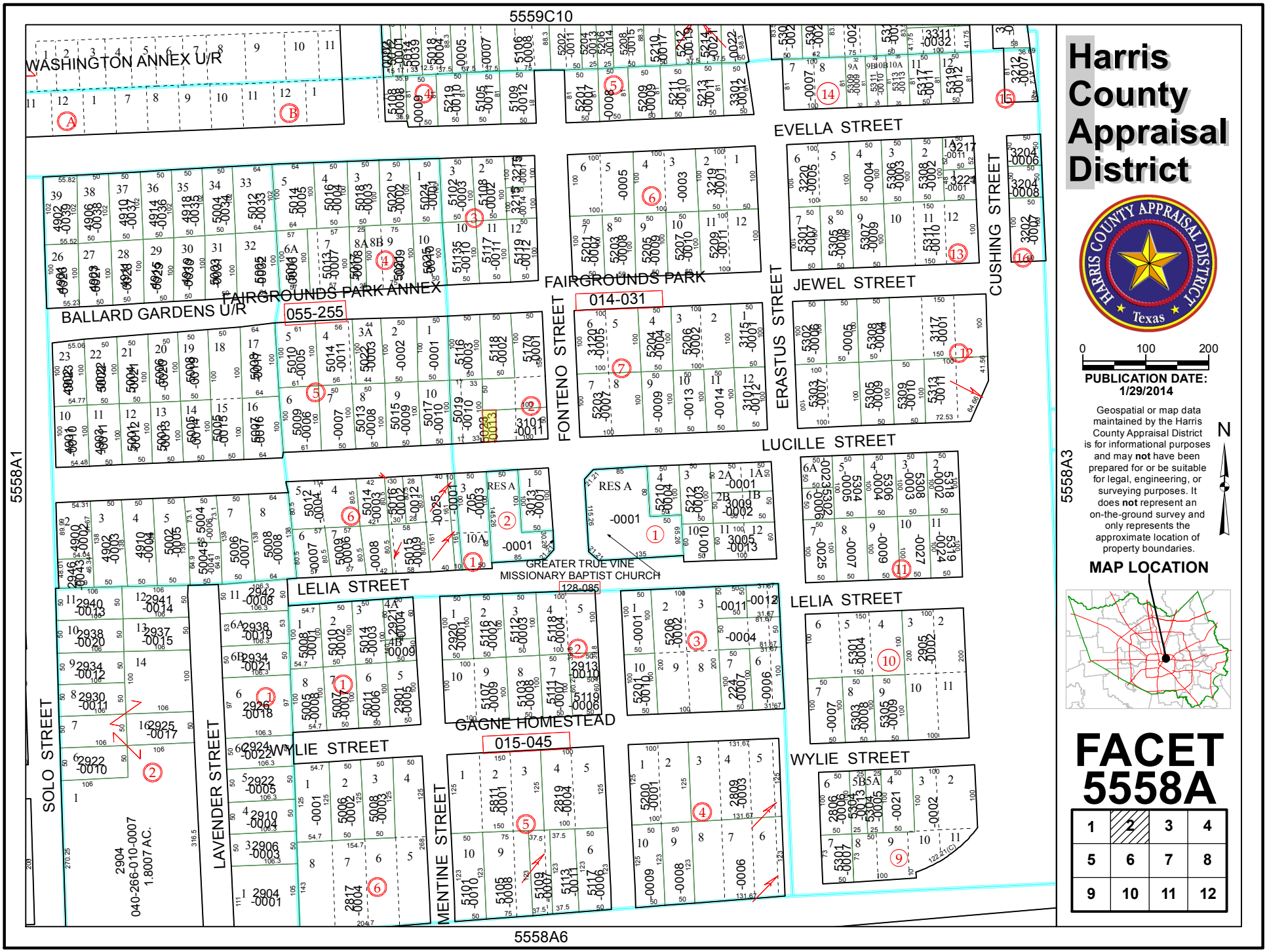
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY

1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5023 Lucille St. (4506O&E)

We have checked the records on the following property up through and including November 25, 2014, and find as follows:

PROPERTY:

The West Twenty-five (W.25'), of the South one-half (S. ½) of Lot Eleven (11) of Block Two (2) of Fairground Park Addition, an addition in Harris County, Texas, according to the map thereof recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Leticia Serna and Jose A. Martinez by virtue of Deed filed for record under Harris County Clerk's File No. Y907969.

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PREMLIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title search (upon which on the Company may reply). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

STARTEX TITLE COMPANY:

BY: Paige Ervin

Paige Ervin – Customer Service

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 95

HCAD ID - 0140340000011

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3101 Fontinot St, Houston,TX 77026 (Map ID 95, HCAD ID 0140340000011)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[87]				Property Ownership		Anticipated Filing Date[88]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[87] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[88] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

The south ½ of lot twelve (12) and the adjoining east twenty five feet of the south ½ of Lot eleven (11) block two (2) of the Fairground Park addition, A subdivision in Harris County, Texas according to the map or plat thereof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Alean Dorn with an address of 3101 Fontinot Lucille, Houston, Texas 77026. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 22 day of April, 2015.

[OWNER]
By: Alean Dorn
Name: Alean Dorn

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the 22nd day of April, 2015, personally appeared , Alean Dorn, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 22nd day of April, 2015.

Notary Public in and for the State of Texas,
County of Harris

My Commission Expires:

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

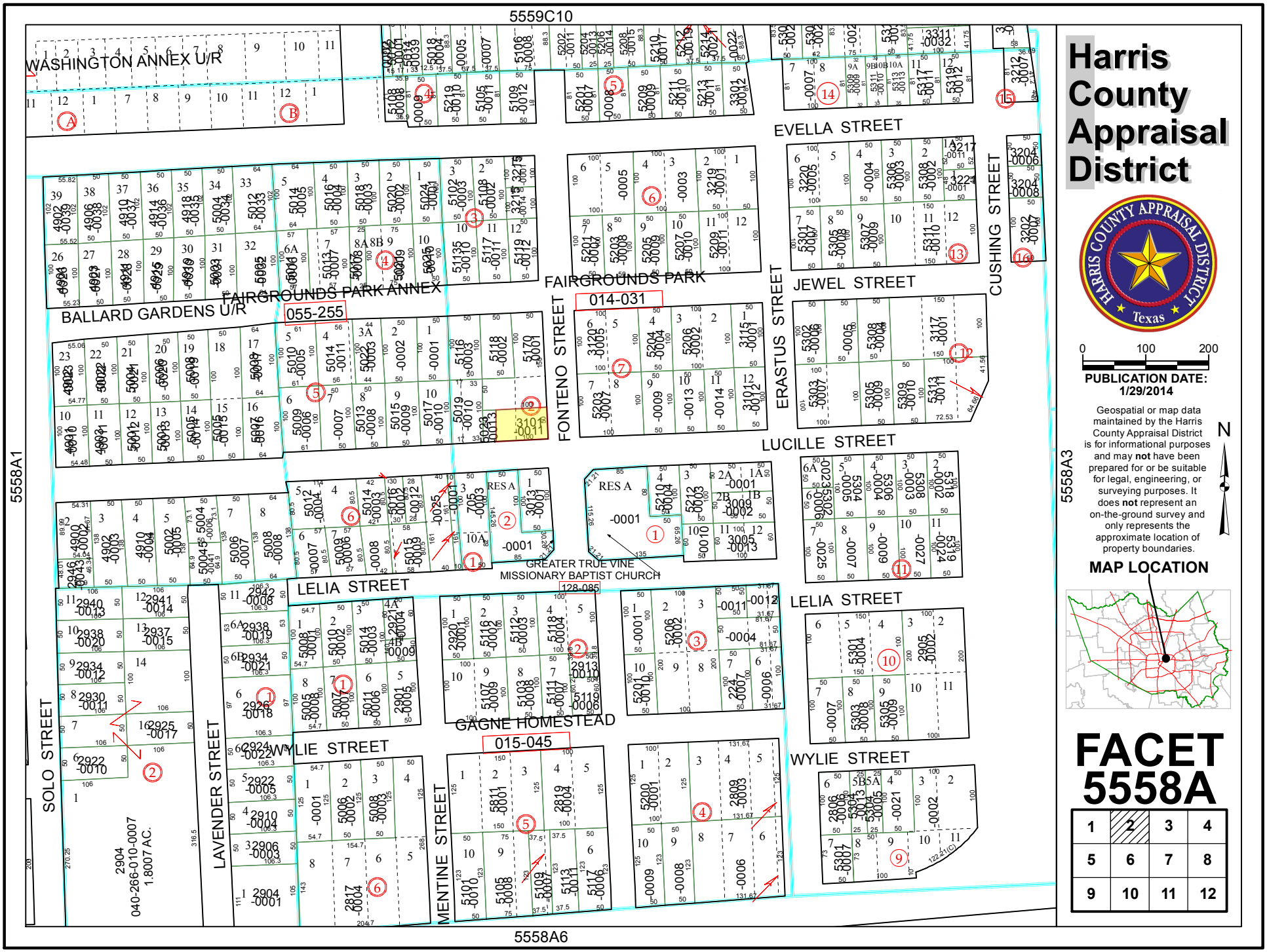
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1



Harris County Appraisal District

HARRIS COUNTY APPRAISAL DISTRICT Texas

0 100 200

PUBLICATION DATE: 1/29/2014

Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may **not** have been prepared for or be suitable for legal, engineering, or surveying purposes. It does **not** represent an on-the-ground survey and only represents the approximate location of property boundaries.

N

MAP LOCATION

FACET 5558A

1	2	3	4
5	6	7	8
9	10	11	12

STARTEX TITLE COMPANY

1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
3101 Fontinot St. (4507O&E)

We have checked the records on the following property up through and including November 25, 2014, and find as follows:

PROPERTY:

The South ½ of Lot Twelve (12) and the adjoining East Twenty-five feet of the South ½ of Lot Eleven (11), Block Two (2) of Fairground Park Addition, an addition in Harris County, Texas, according to the map thereof recorded in Volume 81, Page 460 of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Frank Lee Dorn and wife, Alean Dorn by virtue of Deed filed for record under Harris County Clerk's File No. E318769.

LIENS:

None of record.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PREMLIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title search (upon which on the Company may reply). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by reason of furnishing this report or any verbal statements related thereto. This shall in no way be construed ás Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

STARTEX TITLE COMPANY:

BY: Paige Ervin

Paige Ervin – Customer Service

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

MAP ID - 98

HCAD ID - 0140390000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5203 Lucille St # 10, Houston,TX 77026 (Map ID 98, HCAD ID 0140390000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[93]				Property Ownership		Anticipated Filing Date[94]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[93] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[94] Specify date or amount of time after RAP approval.

Restrictive Covenant

STATE OF TEXAS

COUNTY OF HARRIS

This Restrictive Covenant is filed to provide information concerning certain environmental conditions and use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described in Exhibit 1 attached hereto and incorporated herein by reference.

Lot Seven (7) and Eight (8) in Block Seven (7), of Fairgrounds Park Annex, an addition in Harris County, Texas according to the map or plat therof.

Portions of the soils and/or groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP.

The portion considered to be Affected Property is described on Exhibit 2, which is part of the plume management zone shown in Exhibit 3 attached hereto and incorporated herein by reference.

This Restrictive Covenant is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). A plume management zone was established so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit 3 provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements.

As of the date of this Restrictive Covenant, the record owner of fee title to the Property is Thomas Blodget (Owner) with an address of 17 Stonewall, Irvine Ca. 92620. In consideration of the Response Actions by Union Pacific (Responder), approval of the Response Action Completion Report, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Owner has agreed to place the following restrictions on the Property in favor of the TCEQ and the State of Texas, to-wit:

1. Exposure to groundwater underlying the Affected Property for any purpose is prohibited until such time when all of the chemicals of concern no longer exceed their

respective protective concentration levels. The maintenance and monitoring described in Exhibit 4 is required. Any modification of this restrictive covenant is prohibited without prior approval of TCEQ.

2. These restrictions shall be a covenant running with the land.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle,
Building E
Austin, Texas 78753

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ SWR No. 31547

This Restrictive Covenant may be rendered of no further force or effect only by a release executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Restrictive Covenant is filed.

Executed this 5-TH day of August, 2015.

By: Thomas Blodget
Name: Thomas Blodget

STATE OF TEXAS
HARRIS COUNTY

BEFORE ME, on this the _____ day of August, 2015, personally appeared Thomas Blodgett, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 5TH day of August, 2015.

Notary Public in and for the ~~State of~~ Texas,
County of Harris

My Commission Expires: _____

PAUL A FRANKLIN
My Commission Expires
December 11, 2018

Executed this _____day of _____, 20___.

Union Pacific Railroad [RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, 20_____ Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation **[RESPONDER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed on behalf of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20____.

_____

Notary Public in and for the State of Nebraska
County of _____
My Commission Expires: _____

Accepted as Third Party Beneficiary this _____day of _____, 20___.

Texas Commission on Environmental Quality

By: _____
Name: _____
Title: _____

STATE OF TEXAS §
TRAVIS COUNTY §

BEFORE ME, on this the _____ day of _____, 20___, personally appeared _____ , _____, of the Texas Commission on Environmental Quality, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

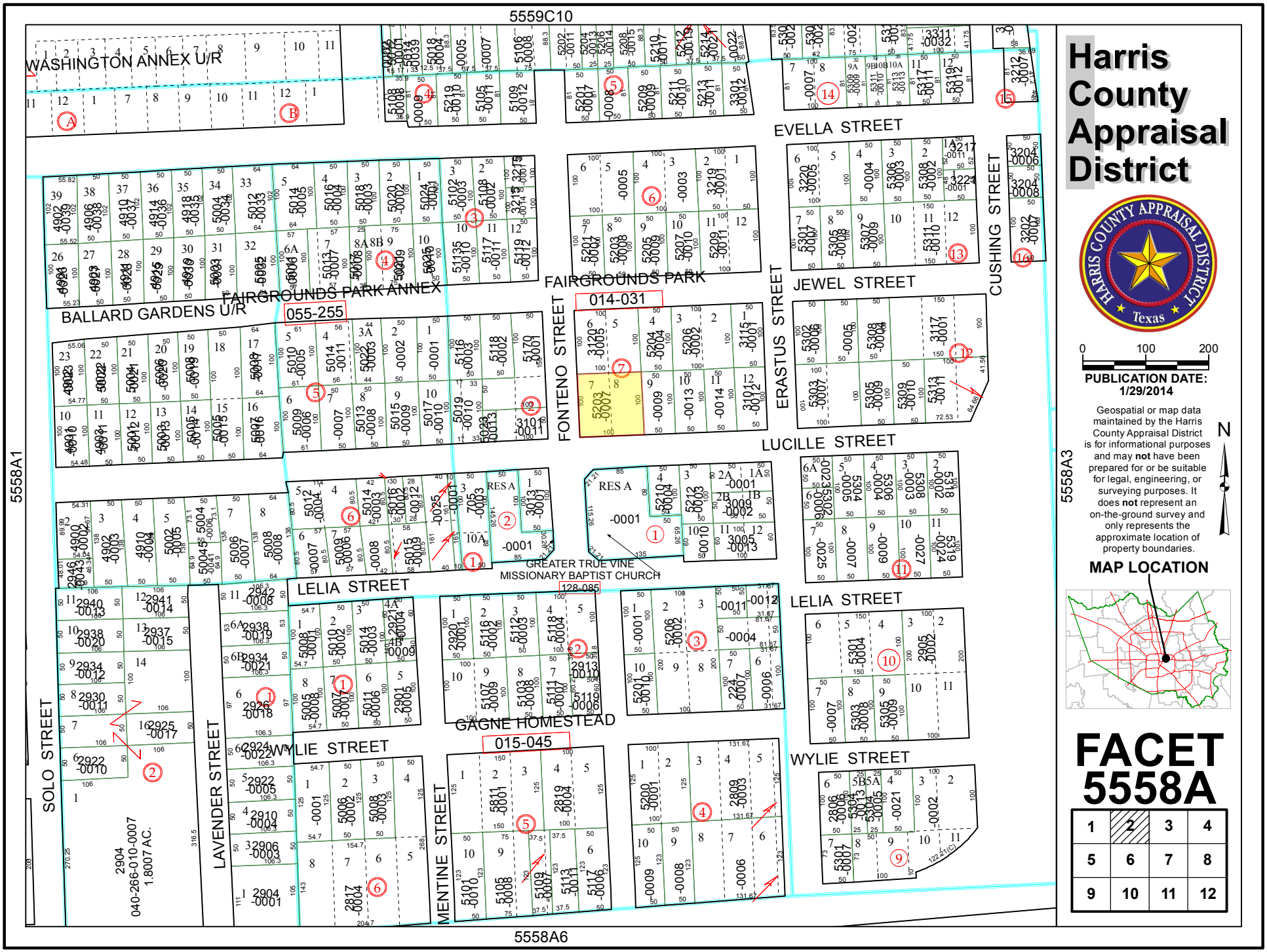
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this __ day of_____, 20___.

Notary Public in and for the State of Texas,
County of Travis
My Commission Expires: _____

EXHIBIT 1

PROPERTY LEGAL DESCRIPTION AND TITLE INFORMATION

EXHIBIT 1


5559C10
5558A1
5558A3
5558A6
WASHINGTON ANNEX U/R
BALLARD GARDENS U/R
FAIRGROUNDS PARK ANNEX
FAIRGROUNDS PARK
EVELLA STREET
CUSHING STREET
FONTENO STREET
ERASTUS STREET
JEWEL STREET
LUCILLE STREET
LELIA STREET
WYLIE STREET
SOLO STREET
LAVENDER STREET
MENTINE STREET
GAGNE HOMESTEAD
GREATER TRUE VINE MISSIONARY BAPTIST CHURCH
055-255
014-031
128-085
015-045
2904
040-266-010-0007
1.8007 AC.
Harris County Appraisal District
HARRIS COUNTY APPRAISAL DISTRICT
Texas
0
100
200
PUBLICATION DATE:
1/29/2014
Geospatial or map data maintained by the Harris County Appraisal District is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and only represents the approximate location of property boundaries.
N
MAP LOCATION
FACET
5558A
1
2
3
4
5
6
7
8
9
10
11
12

STARTEX TITLE COMPANY

1177 West Loop South, Suite 1475
Houston, Texas 77027

ABSTRACTORS CERTIFICATE
for
5203 Lucille St. #10 (4509O&E)

We have checked the records on the following property up through and including November 25, 2014, and find as follows:

PROPERTY:

Lots Seven (7) and Eight (8), in Block Seven (7), of Fairground Park Addition, an addition in Harris County, Texas, according to the map thereof recorded in Volume 84, Page 481 of the Deed Records of Harris County, Texas.

TITLE VESTED IN:

Thomas Blodgett and wife, Gay Blodgett by virtue of Deed filed for record under Harris County Clerk's File No. X008917.

LIENS:

Deed of Trust dated February 26, 2014, filed for record under Harris County Clerk's File No(s). 20140080372, executed by Thomas and Gay Blodgett to T.D. Service Company, Trustee, and all terms, conditions and stipulations contained therein, including any additional indebtedness secured thereby, securing one promissory note of even date therewith in the principal amount of $182,000.00, payable to Velocity Commercial Capital.

ABSTRACTS OF JUDGMENT, FEDERAL TAX LIENS, ETC:

None of record.

NOTICE: STARTEX TITLE COMPANY ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS IN THIS REPORT OR FOR VERBAL STATEMENTS. THIS IS A COPY OF A PREMLIMINARY REPORT MADE FOR STARTEX TITLE COMPANY ONLY, FOR SPECIFIC PURPOSES, AND IT MAY OR MAY NOT BE COMPLETE FOR THE PURPOSE OF OTHERS. If a copy is furnished to other parties, it is to facilitate preparation of the necessary instruments, to point out curative requirements, if any, and to show the result of the Company's title search (upon which on the Company may reply). None of the information contained herein, or the absence of other information, constitutes a representation to any party, other than the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company, as to the status of the title. If a title defect or encumbrance should exist which is not disclosed hereon, the Company shall not be liable by

reason of furnishing this report or any verbal statements related thereto. This shall in no way be construed as Commitment for Title Insurance.

THIS CERTIFICATE SHALL NOT CONSTITUTE A COMMITMENT TO ISSUE TITLE INSURANCE, AND THE LIABILITY HEREUNDER IS LIMITED TO THE CONSIDERATION PAID HEREFORE.

STARTEX TITLE COMPANY:

BY: Paige Ervin

Paige Ervin – Customer Service

EXHIBIT 2

AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- Corrective Action System Well (DNAPL Recovery)
- Groundwater PCLE Zones (A-TZ, B-CZ/B-TZ and C-TZ)
- Alternate Groundwater Point of Exposure (POE)
- Attenuation Monitoring Point (AMP)
- RCRA Unit No. 1 Point of Compliance (POC) Well
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Proposed Cumulative PMZ (A-TZ, B-CZ/B-TZ, and C-TZ)

- On-Site PMZ
- Off-Site PMZ
- Off-Site PMZ City of Houston ROW

Notes:
1. Vertical datum based on City of Houston Vertical Datum (HVD).
2. DNAPL = Dense non-aqueous phase liquids detected in monitoring well (July 2014).
3. * - On-Site PMZ includes UPRR-owned property and City of Houston Right of Way (ROW).

N

Approx. Scale in Feet

0 200 400

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

OFF-SITE PMZ

ON-SITE PMZ (WEST)

ON-SITE PMZ (MAIN)

HWPW

Englewood Intermodal Yard

Lucille, Fontinot, Lelia, Wipprecht, Solo, Kashmere, Lavender, Clementine, Wylie, Liberty Road, Erastus, Cushing, Lockwood, Harlem, Sudan, Erastus

MW-67B, PMW-84B, PMW-83B, PMW-83C, MW-28C, MW-63B, MW-68C, MW-33BR, MW-26A, MW-36B, MW-36A, MW-45C, MW-44A (DNAPL), MW-46C (DNAPL), MW-54C, MW-25A, MW-34CR, MW-44C (DNAPL), **PMW-82B, MW-35B**, MW-35A, MW-32B, (DNAPL), MW-70B, MW-15C, MW-15A, MW-17C, MW-57A (DNAPL), MW-18AR, MW-60A, MW-47C, MW-19C**, MW-39B, MW-38B, MW-12B (DNAPL), MW-42B, MW-62B, MW-41B (DNAPL), P-11, MW-02, MW-01A, MW-10A, MW-08, P-12, MW-10B, MW-11B, MW-11A, MW-07, MW-22BR**, MW-22AR**, **MW-49B, MW-48C, MW-61A, MW-69A, MW-59A, MW-59B, MW-75B (DNAPL), MW-78A (DNAPL), MW-80B, PMW-85C, MW-77A, MW-76C**, MW-50A, MW-81B, **PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 2

GROUNDWATER AFFECTED PROPERTY

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT 3

PLUME MANAGEMENT ZONE MAP AND MAINTENANCE/MONITORING REQUIREMENTS

EXPLANATION

- UPRR Property Boundary
- Property Boundary (GIMS)
- City of Houston-Owned ROW Off-Site PMZ
- Off-Site PMZ
- Monitoring Well Location
- Proposed Monitoring Well
- Proposed Replacement Well (MW-22AR & MW-22BR)

Notes:

1. Vertical datum based on City of Houston Vertical Datum (HVD).

N

Approx. Scale in Feet

0 150 300

Source:
Parcel Boundaries: City of Houston Geographic Information & Management Systems (GIMS).
Aerial: Houston-Galveston Area Council (HGAC) 2012 Aerial.

HWPW

Englewood Intermodal Yard

Lucille
Lelia
Wylie
Liberty Road
Sudan
Fontinot
Wipprecht
Solo
Lavender
Clementine
Erastus
Cushing
Lockwood
Kashmere
Harlem

MW-67B
PMW-84B
MW-28C
PMW-83B
PMW-83C
MW-63B
MW-68C
MW-33BR
MW-26A
**PMW-82B
MW-35B**
MW-32B
MW-70B
MW-36B
MW-36A
MW-44A
MW-45C
MW-46C
MW-54C
MW-25A
MW-44C
MW-34CR
MW-57A
MW-16AR
MW-60A
MW-15C
MW-15A
MW-17C
MW-47C
MW-19C**
MW-39B
MW-38B
MW-12B
MW-42B
MW-62B
MW-41B
P-11
MW-02
MW-01A
MW-22BR**
MW-10A
MW-10B
MW-08
P-12
MW-22AR**
MW-11B
MW-11A
MW-07
MW-48C
**MW-49B
MW-61A
MW-59A
MW-59B
MW-69A
MW-75B
MW-78A
MW-80B
PMW-85C
MW-77A
MW-76C**
MW-50A
MW-81B
**PMW-86C

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Exhibit 3

OFF SITE PMZ AND CITY OF HOUSTON-OWNED ROW

PROJECT: 1358	BY: ADJ	REVISIONS
DATE: NOV., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXHIBIT "3"
MAINTENANCE AND MONITORING

Monitoring wells located near the property in the City of Houston right of way (ROW) listed in the table below will be sampled for chemicals of concern (COCs) (see Table C-1) on a semi-annual basis. At each well, the presence of light and dense non-aqueous phase liquids (LNAPL and DNAPL, respectively) will be measured using a decontaminated oil-water interface probe, or equivalent measuring device. The probe will be lowered into the well until the instrument indicates contact of the probe with the NAPL surface, if present, then the top of the water surface, and to the total depth of the well to evaluate for the presence of DNAPL. The depth to NAPL and water measurements will be referenced to the surveyed reference point at the top of the well casing. Levels will be measured to the nearest 0.01 foot and recorded on the water level measurement form. A peristaltic pump with dedicated tubing will be used to purge groundwater from each monitoring well using micro-purging techniques (anticipated purge rate of 0.1 L/min or less). Purge water will be monitored for specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential (Redox), and turbidity. Purging will be continued until the field parameters have stabilized per the sampling plan, after which a groundwater sample will be collected for laboratory analysis. Groundwater purged from monitoring wells will be containerized and removed from the property and stored on the Union Pacific Railroad Company property at 4910 Liberty Road. Laboratory analysis will be performed for the COCs on a standard turnaround basis. Analytical results from the groundwater sampling will be submitted to the TCEQ on an annual basis.

Monitoring wells will be inspected on a semi-annual basis for signs of damage, including well pads, casing, locks, and, protective covers.

List of Monitoring Wells Located within City of Houston ROW

MW-25A	***MW-32B***	***MW-28C***
MW-26A	***MW-33BR***	***MW-34CR***
MW-36A	***MW-35B***	***MW-44C***
MW-44A	***MW-36B***	***MW-45C***
MW-59A	***MW-59B***	***MW-46C***
MW-60A	***MW-63B***	***MW-48C***
MW-61A	***MW-67B***	***MW-54C***
MW-69A	***MW-70B***	***MW-68C***
	PMW-83B (proposed)	***PMW-83C (proposed)***
	PMW-84B (proposed)	

APPENDIX 5B

LAND OWNER CONCURRENCE - INSTITUTIONAL CONTROLS NOT SIGNED/LANDOWNER CANNOT BE LOCATED

BAKER WOTRING LLP

PRIVILEGED & CONFIDENTIAL
MEMORANDUM

TO: Eric C. Matzner, P.G.

FROM: Paul Shanklin

DATE: December 22, 2015

RE: Union Pacific Railroad – Houston Wood Preserving Works, TCEQ SWR No. 31547/IHW Permit/Compliance Plan No. 50343 - Summary of Good-Faith efforts to identify and locate property owners regarding in connection with restrictive covenant

---

The Environmental team at Union Pacific has been working to obtain consent from landowners located in the area of affected groundwater to place restrictive covenants on their properties since August 2014, with the beginning developments of the Plume Management Zone (PMZ). Prior to contacting landowners, Title Reports were prepared by Texas American Title Company from the real property records for the properties in the area of the PMZ. In late August 2014, on behalf of Union Pacific, outside counsel for Union Pacific (now "Baker Wotring") sent letters by regular and certified mail to landowners identified as having property in the PMZ. The letter complied with the requirements of 30 T.A.C. § 350.111(c) and included a copy of the restrictive covenant. Baker Wotring then contacted Ministers and Pastors that have churches and congregations in the affected neighborhood to arrange a community meeting. Baker Wotring contracted with local residents to distribute flyers throughout the affected area informing the property owners of a meeting to discuss the effect of contaminants found on their property. The informational flyers were placed on every piece of property located within the PMZ.

The community meeting took place at the Greater True Vine Baptist Church on September 11, 2014 and approximately 189 persons attended the meeting. The Environmental team of UP attorneys, staff and outside counsel (collectively the "Team") explained to the residents that ***none*** of the properties in the area use the groundwater for drinking; rather, they are on city drinking water provided by the City of Houston. None of the City of Houston groundwater supply wells are in the area of the Site. In addition, no groundwater drinking wells have been identified in the area. The Team further explained that in order to ensure that the shallow groundwater is not used in the future, the Team was contacting the landowners in the area to request that they execute a restrictive covenant which would prohibit use of the shallow groundwater on their property. The residents were informed that the restrictive covenant would be filed in the property records as part of planned work at the site to institute a Plume Management Zone. The Team answered questions from the local residents well into the evening. Maps were displayed identifying the affected properties that Union Pacific was asking to be

subject to the restrictive covenants. Title documents which indicated the rightful owners were also provided.

The Team took names and addresses of the owners and made arrangements with each owner to meet them individually to explain the need for the restrictive covenant and to make sure each person claiming ownership had the proper documentation to execute the covenant. Since September 11, 2014, Team members have made visits to the community on over 150 occasions and spoken to over 200 people who have claimed ownership in properties within the PMZ. There has been no community opposition to placing the restrictive covenant on the deed records. To date approximately 72% of owners have notarized documents indicating their agreement with the deed recordation. Despite these efforts, there are still some properties for which ownership cannot be determined or where owners cannot be located.

MAP ID - 2

HCAD ID - 0402660100004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2910 Lavender St, Houston,TX 77026 (Map ID 2, HCAD ID 0402660100004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[3]				Property Ownership		Anticipated Filing Date[4]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[3] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[4] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ray Carrington

2910 Lavender St

Missouri City, TX 77459-1837

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X RAY CARRINGTON ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* RAY CARRINGTON C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7005 1160 0001 8874 7119

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Ray Carrington
4102 Waterstone St
Missouri City, TX 77459-1837

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2910 Lavender St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Carrington:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

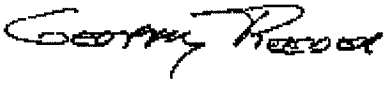
PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,



Geoffrey Reeder, P.G.

Enclosure

MAP ID - 7B

HCAD ID - 0402660100001

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 2510 0004 3684 0103

ZIP 77002
02 4W
0001394847

First Class Mail

UNC

UNC

UNC

CBW

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Clark Investment Co
4901 Liberty Rd
Houston, TX 77026-5263

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Clark Investment Co

2909 Lavender St

Houston, TX 77026-5263

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from ser* 7004 2510 0004 3684 0103

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

78

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Clark Investment Co
4901 Liberty Rd
Houston, TX 77026-5263

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2909 Lavender St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

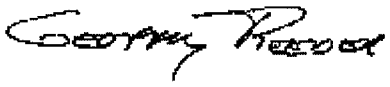
PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,



Geoffrey Reeder, P.G.

Enclosure

MAP ID - 11

HCAD ID - 0141430000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2813 Fontinot St, Houston,TX 77026 (Map ID 11, HCAD ID 0141430000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[21]				Property Ownership		Anticipated Filing Date[22]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

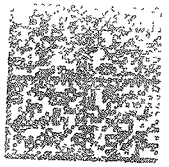
[21] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[22] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1745



ZIP 77002
02 1W
0001394849

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Jose A & Reina I Coto
2819 Fontinot St
Houston, TX 77026-5205

8-30-14

UNC

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

SENDER: *COMPLETE THIS SECTION*	*COMPLETE THIS SECTION ON DELIVERY*
■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits.	A. Signature X ☐ Agent ☐ Addressee B. Received by *(Printed Name)* — C. Date of Delivery D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No
1. Article Addressed to: Jose A & Reina I Coto 2813 Fontinot St Houston, TX 77026-5205	Service Type ☐ Certified Mail ☐ Express Mail ☐ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D. 4. Restricted Delivery? *(Extra Fee)* ☐ Yes
2. Article Number *(Transfer from service)* 7004 1160 0007 3772 1745	

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

FIRST • CLASS FIRST • CLASS FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Jose A & Reina I Coto
2819 Fontinot St
Houston, TX 77026-5205

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2813 Fontinot St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. and Mrs. Coto:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

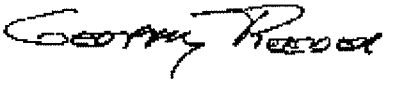
PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,



Geoffrey Reeder, P.G.

Enclosure

MAP ID - 12

HCAD ID - 0141430000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5101 Liberty Rd, Houston,TX 77026 (Map ID 12, HCAD ID 0141430000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[23]				Property Ownership		Anticipated Filing Date[24]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[23] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[24] Specify date or amount of time after RAP approval.

2. Article Number

9414 7266 9904 2016 6052 81

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

Wallace
Janie Longoria
1510 Beall St.
Houston, TX 77008-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP UP

PS Form 3811, January 2005 Domestic Return Receipt

12

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Janie & Wallace Longoria
1510 Beall St
Houston, TX 77008-3444

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5101 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. and Mrs. Longoria:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 13

HCAD ID - 0141430000008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5105 Liberty Rd, Houston,TX 77026 (Map ID 13, HCAD ID 0141430000008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[25]				Property Ownership		Anticipated Filing Date[26]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[25] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[26] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1769

U.S. POSTAGE
ZIP 77002
02 1W
0701394849

First Class Mail

☐ Not Deliverable As Addressed
Unable To Forward
☐ Insufficient Address
☐ Moved, Left No Address
☐ Unclaimed ☐ Refused
☐ Attempted - Not Known
☐ No Such Street ☐ Number
☐ Vacant ☐ Not Deliverable
☐ No Mail Receptacle
☐ Box Closed - No Order
☐ Returned For Better Address
☐ Postage Due _____

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Alejandro Gonzalez
4088 Pamela Way
Montgomery, TX 77316-2779

Copies AH | OA | 12-13

8/30/14
9-12
9.21

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Alejandro Gonzalez

5105 Liberty Rd

Montgomery, TX 77316-2779

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

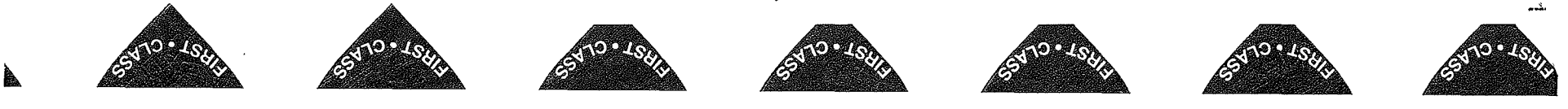
4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service lab(7004 1160 0007 3772 1769

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA



Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Alejandro Gonzalez
4088 Pamela Way
Montgomery, TX 77316-2779

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5105 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Gonzalez:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 14

HCAD ID - 0141430000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5109 Liberty Rd, Houston,TX 77026 (Map ID 14, HCAD ID 0141430000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[27]				Property Ownership		Anticipated Filing Date[28]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[27] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[28] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Joe H Martinez

5109 Liberty Rd

Houston, TX 77026-5218

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Guadalupe Mata ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) Guadalupe Mata C. Date of Delivery 8/30/14

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7004 1160 0007 3772 1721

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

14

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Joe H Martinez
5109 Liberty Rd
Houston, TX 77026-5218

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5109 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Martinez:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 15

HCAD ID - 0141430000011

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5113 Liberty Rd, Houston,TX 77026 (Map ID 15, HCAD ID 0141430000011)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[29]				Property Ownership		Anticipated Filing Date[30]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[29] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[30] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Harris County Cause No 2003-22512

5113 Liberty Rd

Houston, TX 77251-1525

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. ~~Received by (Printed Name)~~ ARTHUR SIMPSON

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from serv 7004 1160 0007 3772 1806

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

15

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Harris County Cause No 2003-22512
PO Box 1525
Houston, TX 77251-1525

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5113 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 17

HCAD ID - 0141410000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5201 Wylie St, Houston,TX 77026 (Map ID 17, HCAD ID 0141410000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[33]				Property Ownership		Anticipated Filing Date[34]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

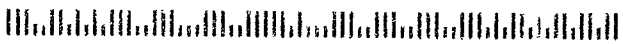
[33] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[34] Specify date or amount of time after RAP approval.

+ 1160 0007 3772 1783

9-7-17

NIXIE 000003013-1N 11/10/14

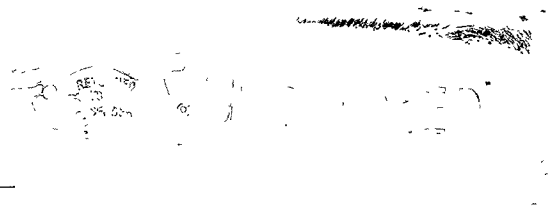
RETURN TO SENDER
ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD
RETURN TO SENDER



First Class Mail

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Doris Jean Jefferson
PO Box 23611
Houston, TX 77228-3611



First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Doris Jean Jefferson

5201 Wylie St

Houston, TX 77228-3611

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service lat

7004 1160 0007 3772 1783

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

17

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Doris Jean Jefferson
PO Box 23611
Houston, TX 77228-3611

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5201 Wylie St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Ms. Jefferson:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 18

HCAD ID - 0141420000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5201 Wylie St, Houston,TX 77026 (Map ID 18, HCAD ID 0141420000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[35]				Property Ownership		Anticipated Filing Date[36]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[35] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[36] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Charity Baptist Church C/O Rev F W Mcilveen

2809 Erastus St

Houston, TX 77026-5303

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X _____ ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Service Type

☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service ...)* 7004 1160 0007 3772 1790

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

18

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Charity Baptist Church
5217 Liberty Rd
Houston, TX 77026-5313

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5201 Wylie St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 19

HCAD ID - 0141420000003

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2809 Erastus St, Houston,TX 77026 (Map ID 19, HCAD ID 0141420000003)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[37]				Property Ownership		Anticipated Filing Date[38]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[37] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[38] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Charity Baptist Church

5201 Wylie St

Houston, TX 77026-5313

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7004 2510 0004 3684 3005

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Charity Baptist Church C/O Rev F W
Mcilveen
2809 Erastus St
Houston, TX 77026-5303

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2809 Erastus St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Rev. McIlveen:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 20

HCAD ID - 0141420000009

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5201 Liberty Rd, Houston,TX 77026 (Map ID 20, HCAD ID 0141420000009)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[39]				Property Ownership		Anticipated Filing Date[40]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[39] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[40] Specify date or amount of time after RAP approval.

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

FIRST • CLASS

FIRST • CLASS

FIRST • CLASS

7004 1160 0007 3772 1813

ZIP 77002
02 1W
000 39454

UNC First Class Mail

UNC

CBH

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Full Gospel Christian Assn
5201 Liberty Rd
Houston, TX 77026-5313

UNC UNC

NIXIE 770252009-1N 09/16/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Full Gospel Christian Assn
5201 Liberty Rd
Houston, TX 77026-5313

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Numbe *(Transfer from*
7004 1160 0007 3772 1813

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

20

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Full Gospel Christian Assn
5201 Liberty Rd
Houston, TX 77026-5313

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5201 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 24

HCAD ID - 0140410000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5311 Liberty Rd, Houston,TX 77026 (Map ID 24, HCAD ID 0140410000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[47]				Property Ownership		Anticipated Filing Date[48]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[47] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[48] Specify date or amount of time after RAP approval.

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1837

ZIP 77002
02 1W
0001394841

NOT 8-30

First Class Mail

CBH

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Elmer Preston Trust
3319 Liberty Rd
Houston, TX 77026-6238

UNC

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

UNC

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Elmer Preston Trust

5311 Liberty Rd

Houston, TX 77026-6238

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article *(Transfe...* 7004 1160 0007 3772 1837

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Elmer Preston Trust
3319 Liberty Rd
Houston, TX 77026-6238

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5311 Liberty Rd for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 25

HCAD ID - 0651290800937

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3300 E Lockwood Dr, Houston,TX 77026 (Map ID 25, HCAD ID 0651290800937)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[49]				Property Ownership		Anticipated Filing Date[50]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[49] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[50] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1844

ZIP 77002 $
02 1W
0001394849 A

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Not
8-30

Robert Damian
3300 E Lockwood Dr
Houston TX 77026-1811

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

UNC

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Damian

3300 E Lockwood Dr

Houston, TX 77012-1649

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from ser 7004 1160 0007 3772 1844

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

25

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Robert Damian
3300 E Lockwood Dr
Houston, TX 77026-1811

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 3300 E Lockwood Dr for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Damian:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 26

HCAD ID - 0402600000019

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3300 E Lockwood Dr, Houston,TX 77026 (Map ID 26, HCAD ID 0402600000019)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[51]				Property Ownership		Anticipated Filing Date[52]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[51] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[52] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1844

ZIP 77002 $
02 1W
0001394849 A

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Not
8-30

Robert Damian
3300 E Lockwood Dr
Houston TX 77026-1811

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

UNC

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Damian

3300 E Lockwood Dr

Houston, TX 77012-1649

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from ser 7004 1160 0007 3772 1844

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Robert Damian
7938 Capitol St
Houston, TX 77012-1649

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 3300 E Lockwood Dr for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Damian:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 29

HCAD ID - 0141400000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2913 Fontinot St, Houston,TX 77026 (Map ID 29, HCAD ID 0141400000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[55]				Property Ownership		Anticipated Filing Date[56]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[55] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[56] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Paul M Perez

2913 Fontinot St

Houston, TX 77026-5210

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Martha Gilliam ☐ Agent ☐ Addressee

B. Received by (Printed Name) MARTHA Gilliam

C. Date of Delivery 8/30/14

D. Is delivery address different from item 1? ☐ Yes

If YES, enter delivery address below: ☐ No

3. Service Type

☐ Certified Mail ☐ Express Mail

☐ Registered ☐ Return Receipt for Merchandise

☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Articl *(Tran* 7004 1160 0007 3772 1882

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Paul M Perez
2913 Fontinot St
Houston, TX 77026-5210

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2913 Fontinot St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Perez:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 31

HCAD ID - 0141400000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5111 Wylie St, Houston,TX 77026 (Map ID 31, HCAD ID 0141400000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[59]				Property Ownership		Anticipated Filing Date[60]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[59] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[60] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Aquilina Perez

5111 Wylie St

Houston, TX 77026-5227

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Timothy Sing ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* TIMOTHY SUING

C. Date of Delivery 9/15/14

D. Is delivery address different from item 1? ☐ Yes

If YES, enter delivery address below: ☐ No

3. Service Type

☐ Certified Mail ☐ Express Mail

☐ Registered ☐ Return Receipt for Merchandise

☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Artic *(Trai* 7004 1160 0007 3772 1899

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Aquilina Perez
5111 Wylie St
Houston, TX 77026-5227

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5111 Wylie St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Ms. Perez:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 32

HCAD ID - 0141400000008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5107 Wylie St, Houston,TX 77026 (Map ID 32, HCAD ID 0141400000008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[61]				Property Ownership		Anticipated Filing Date[62]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[61] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[62] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Reginald & Leticia Tolbert

5107 Wylie St

Houston, TX 77026-5227

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Leticia Tolbert C. Date of Delivery 6-30-

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Letic

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from sen 7004 1160 0007 3772 1905

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

32

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Reginald & Leticia Tolbert
5107 Wylie St
Houston, TX 77026-5227

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5107 Wylie St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. and Mrs. Tolbert:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 35

HCAD ID - 0141390000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5011 Wylie St, Houston,TX 77026 (Map ID 35, HCAD ID 0141390000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[67]				Property Ownership		Anticipated Filing Date[68]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[67] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[68] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1943

US POSTAG

ZIP 77002
02 1W
0001394841

UNC

First Class Mail

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

CBW

CONNELLY · BAKER · WOTRING LLP

70 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

8-30-14

Estate Of Carrie Mae Carr
5011 Wylie St
Houston, TX 77026-5225

DB

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Estate Of Carrie Mae Carr

5011 Wylie St

Houston, TX 77026-5225

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Ar
(Ti 7004 1160 0007 3772 1943

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

35

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Estate Of Carrie Mae Carr
5011 Wylie St
Houston, TX 77026-5225

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5011 Wylie St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 50

HCAD ID - 0140400000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 50, HCAD ID 0140400000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[97]				Property Ownership		Anticipated Filing Date[98]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[97] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[98] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 2087

RETURN TO SENDER
FORWARDING ORDER EXPIRED
INSUFFICIENT ADDRESS
UNCLAIMED
REFUSED
ATTEMPTED NOT KNOWN
NO SUCH STREET
NO RECEPTACLE

NO SUCH NUMBER
DECEASED
VACANT

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Percy Vital
304 Sandman Ave
Crosby, TX 77532-6244

NIXIE 775322036-1N 01/24/15

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Percy Vital

0 Lelia St

Crosby, TX 77532-6244

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7004 1160 0007 3772 2087

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS RST • CLASS

50

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Percy Vital
304 Sandman Ave
Crosby, TX 77532-6244

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 0 Lelia St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Vital:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 51

HCAD ID - 0140400000013

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3005 Erastus St, Houston,TX 77026 (Map ID 51, HCAD ID 0140400000013)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[99]				Property Ownership		Anticipated Filing Date[100]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[99] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[100] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 2094

ZIP 77002
02 1W

UNC

First Class Mail

UNC

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

UNC

NIXIE 770252009-1N 09/16/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

UNC

Frank Thomas
3005 Erastus St
Houston, TX 77026-5307

UNC

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Frank Thomas
3005 Erastus St
Houston, TX 77026-5307

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from sen 7004 1160 0007 3772 2094

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS RST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Frank Thomas
3005 Erastus St
Houston, TX 77026-5307

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 3005 Erastus St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Thomas:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 58

HCAD ID - 0141390000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5010 Lelia St, Houston,TX 77026 (Map ID 58, HCAD ID 0141390000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[13]				Property Ownership		Anticipated Filing Date[14]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[13] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[14] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 2162

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	
Return Reciept Fee (Endorsement Required)	

Postmark Here

Res (Endc Nicholas R Alvarado

Tot 5010 Lelia St

Sent Houston, TX 77009-5812

Stree or PO Box No.

City, State, ZIP+4

PS Form 3800, June 2002 See Reverse for Instructions

7004 1160 0007 3772 2162

US POSTAGE
ZIP 77002
02 1W

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Nicholas R Alvarado
3410 Chapman St
Houston, TX 77009-5812

NIXIE 770092045-1N 09/10/14

RETURN TO SENDER
NO SUCH NUMBER
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Nicholas R Alvarado

5010 Lelia St

Houston, TX 77009-5812

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Numb *(Transfer fror* 7004 1160 0007 3772 2162

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Nicholas R Alvarado
3410 Chapman St
Houston, TX 77009-5812

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5010 Lelia St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Alvarado:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 62

HCAD ID - 0141400000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2920 Clementine St, Houston,TX 77026 (Map ID 62, HCAD ID 0141400000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[21]				Property Ownership		Anticipated Filing Date[22]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[21] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[22] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 2209

ZIP 77002
02 1W
0001384849

First Class Mail

NIXIE 770252009-1N 09/16/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

UNC

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

UNC UNC UNC

Jack Perkins
2920 Clementine St
Houston, TX 77026-5204

UNC

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Jack Perkins
2020 Clementine St
Houston, TX 77026-5204

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from se 7004 1160 0007 3772 2209

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS RST • CLASS

62

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Jack Perkins
2920 Clementine St
Houston, TX 77026-5204

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2920 Clementine St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Perkins:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 65

HCAD ID - 0141410000004

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lelia St, Houston,TX 77026 (Map ID 65, HCAD ID 0141410000004)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[27]				Property Ownership		Anticipated Filing Date[28]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[27] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[28] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 2510 0004 3684 0059

ZIP 77002
02 1W
0001394643

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Mallie Pittman
6127 Westover St

NIXIE 770332002-1N 09/26/14 33-1235

RETURN TO SENDER
UNABLE TO FORWARD
UNABLE TO FORWARD
RETURN TO SENDER

1157 $.75 9/26/14

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mallie Pittman

0 Lelia St

Houston, TX 77033-1235

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from ser 7004 2510 0004 3684 0059

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

65

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Mallie Pittman
6127 Westover St
Houston, TX 77033-1235

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 0 Lelia St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Ms. Pittman:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 71

HCAD ID - 0402660100008

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **2942 Lavender St, Houston,TX 77026 (Map ID 71, HCAD ID 0402660100008)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[39]				Property Ownership		Anticipated Filing Date[40]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[39] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[40] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sandra Rena Thompson

2942 Lavender St

Houston, TX 77267-1646

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Numbe *(Transfer from [illegible])* 7004 2510 0004 3684 0110

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Sandra Rena Thompson
PO Box 671646
Houston, TX 77267-1646

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 2942 Lavender St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Ms. Thompson:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 78

HCAD ID - 0522570000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **Leila St, Houston,TX 77026 (Map ID 78, HCAD ID 0522570000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[53]				Property Ownership		Anticipated Filing Date[54]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[53] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[54] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 2510 0004 3684 2930

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $

Certified Fee

Return Receipt Fee (Endorsement Required)

Postmark Here

Resti (Endo Samuel J Schrinsky

Tota Leila St

Sent Milwaukee, WI 53203-2508

Street, or PO Box No.

City, State, ZIP+4

PS Form 3800, June 2002 See Reverse for Instructions

7004 2510 0004 3684 2930

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Samuel J Schrinsky
152 W Wisconsin Ave
Milwaukee, WI 53203-2508

VTF

NIXIE 532032057-1N 09/03/14

RETURN TO SENDER
UNABLE TO FORWARD
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Samuel J Schrinsky

Leila St

Milwaukee, WI 53203-2508

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service lab

7004 2510 0004 3684 2930

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Samuel J Schrinsky
152 W Wisconsin Ave
Milwaukee, WI 53203-2508

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on Leila St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Schrinsky:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 79

HCAD ID - 0522570000006

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5009 Lelia St, Houston,TX 77026 (Map ID 79, HCAD ID 0522570000006)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[55]				Property Ownership		Anticipated Filing Date[56]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[55] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[56] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 2510 0004 3684 2947

UNC

US POSTAGE

ZIP 77002
02 1W
0001394649

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Clara C Humphrey
5009 Lelia St
Houston, TX 77026-5213

UNC

UNC

NIXIE 770262021-1N 09/22/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Clara C Humphrey

5009 Lelia St

Houston, TX 77026-5213

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service la 7004 2510 0004 3684 2947

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Clara C Humphrey
5009 Lelia St
Houston, TX 77026-5213

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5009 Lelia St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Ms. Humphrey:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 80

HCAD ID - 0522570000007

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5007 Lelia St, Houston,TX 77026 (Map ID 80, HCAD ID 0522570000007)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[57]				Property Ownership		Anticipated Filing Date[58]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[57] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[58] Specify date or amount of time after RAP approval.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Johnnie M York

5007 Lelia St

Houston, TX 77078-4025

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Johnnie York ☐ Agent ☐ Addressee

B. Received by (Printed Name) Johnnie York C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

HOUSTON TX 770 5 2014

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service) 7004 2510 0004 3684 2954

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

80

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Johnnie M York
9231 Oak Knoll Ln
Houston, TX 77078-4025

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 5007 Lelia St for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. York:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 89

HCAD ID - 0522570000002

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5016 Lucille St, Houston,TX 77026 (Map ID 89, HCAD ID 0522570000002)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[75]				Property Ownership		Anticipated Filing Date[76]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[75] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[76] Specify date or amount of time after RAP approval.

CERTIFIED MAIL®

9414 7266 9904 2016 6050 76

RETURN RECEIPT REQUESTED

FIRST • CLASS

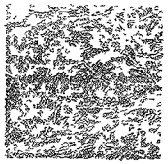
FIRST • CLASS

FIRST • CLASS

FIRST • CLASS

FIRST • CLASS

FIRST • CLASS



US POSTAGE

ZIP 77002
02 1M
0001394847

First Class Mail

ANK

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

FROM THE DESK OF KAREN REYES

TO:

On Time LP
5016 Lucille Street
Houston, TX 77026-

ANK

NIXIE 770262023-1N 06/30/15

RETURN TO SENDER
ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

C

Thank you for using Return Receipt Service

RETURN RECEIPT REQUESTED
USPS® MAIL CARRIER
DETACH ALONG PERFORATION

2. Article Number

9414 7266 9904 2016 6050 76

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

On Time LP
5016 Lucille Street
Houston, TX 77026-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP

2011 January 2005 Domestic Return Receipt

Thank you for using Return Receipt Service

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

FIRST • CLASS

89

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

Certified Article Number
9414 7266 9904 2016 6050 76
SENDERS RECORD

June 10, 2015

On Time LP
5016 Lucille Street
Houston, TX 77026

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

RE: Request for Agreement for Restrictive Covenant on 5016 Lucille Street for Union Pacific Railroad Company – Houston Wood Preserving Works Facility, 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to

prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting was held on September 11, 2014 at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street. There we provided more information and answered questions the residents had. Your property has been recently added to the affected area. If you have any questions for UPRR, please direct your questions to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197, or to Paul A. Shanklin, Connelly Baker Wotring, 700 JPMorgan Chase Tower, 600 Travis, Houston, Texas 77002, 713-980-1737. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 90

HCAD ID - 0522570000012

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **0 Lucille, Houston,TX 77026 (Map ID 90, HCAD ID 0522570000012)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[77]				Property Ownership		Anticipated Filing Date[78]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[77] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[78] Specify date or amount of time after RAP approval.

CERTIFIED MAIL®

FIRST • CLASS

9414 7266 9904 2016 6050 83

RETURN RECEIPT REQUESTED

ZIP 77002
02 1W
0001324845

NIXIE 770262110-1N 300 06/17/15

RETURN TO SENDER
INSUFFICIENT ADDRESS
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

FROM THE DESK OF KAREN REYES

TO·

Fajer Properties
LLC
0 Lucille Street
Houston, TX 77026-

First Class Mail

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

C

Thank you for using Return Receipt Service

RETURN RECEIPT REQUESTED
USPS® MAIL CARRIER
DETACH ALONG PERFORATION

2. Article Number

9414 7266 9904 2016 6050 83

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

Fajer Properties
LLC
0 Lucille Street
Houston, TX 77026-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP

PS Form 3811, January 2005 Domestic Return Receipt

Thank you for using Return Receipt Service

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

90

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

Certified Article Number
9414 7266 9904 2016 6050 83
SENDERS RECORD

June 10, 2015

Fajer Properties, LLC
0 Lucille Street
Houston, TX 77026

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

RE: Request for Agreement for Restrictive Covenant on 0 Lucille Street for Union Pacific Railroad Company – Houston Wood Preserving Works Facility, 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to

prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting was held on September 11, 2014 at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street. There we provided more information and answered questions the residents had. Your property has been recently added to the affected area. If you have any questions for UPRR, please direct your questions to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197, or to Paul A. Shanklin, Connelly Baker Wotring, 700 JPMorgan Chase Tower, 600 Travis, Houston, Texas 77002, 713-980-1737. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 93

HCAD ID - 0140340000010

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5019 Lucille St, Houston,TX 77026 (Map ID 93, HCAD ID 0140340000010)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[83]				Property Ownership		Anticipated Filing Date[84]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[83] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[84] Specify date or amount of time after RAP approval.

CERTIFIED MAIL®

9414 7266 9904 2016 6051 13

RETURN RECEIPT REQUESTED

U.S POSTAGE

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Herbert L. Stewart
5019 Lucille Street
Houston, TX 77026-

UNCLAIMED
06/30/15

NIXIE 770262023-1N

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

C

Thank you for using Return Receipt Service

RETURN RECEIPT REQUESTED
USPS® MAIL CARRIER
DETACH ALONG PERFORATION

2. Article Number

9414 7266 9904 2016 6051 13

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

Herbert L. Stewart
5019 Lucille Street
Houston, TX 77026-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP

PS Form 3811, January 2005 Domestic Return Receipt

Thank you for using Return Receipt Service

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

92

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

Certified Article Number
9414 7266 9904 2016 6051 13
SENDERS RECORD

June 10, 2015

Herbert L. Stewart
5019 Lucille Street
Houston, TX 77026

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

RE: Request for Agreement for Restrictive Covenant on 5019 Lucille Street for Union Pacific Railroad Company – Houston Wood Preserving Works Facility, 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to

prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting was held on September 11, 2014 at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street. There we provided more information and answered questions the residents had. Your property has been recently added to the affected area. If you have any questions for UPRR, please direct your questions to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197, or to Paul A. Shanklin, Connelly Baker Wotring, 700 JPMorgan Chase Tower, 600 Travis, Houston, Texas 77002, 713-980-1737. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 96

HCAD ID - 0140340000001

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **5120 Jewel St, Houston,TX 77026 (Map ID 96, HCAD ID 0140340000001)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[89]				Property Ownership		Anticipated Filing Date[90]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[89] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[90] Specify date or amount of time after RAP approval.

CERTIFIED MAIL

FIRST CLASS

$ 007.19⁰
4849 JUN 10 2015

U.S. POSTAGE
ZIP 77002
02 1W
0001394849

9414 7266 9904 2016 6051 44

RETURN RECEIPT REQUESTED

First Class Mail

NIXIE 770262110-1N 300 06/17/15

RETURN TO SENDER
VACANT
UNABLE TO FORWARD
RETURN TO SENDER

CBW

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

KAC

Arditha Morris Woods
5120 Jewel Street
Houston, TX 77026-

AC

First Class Mail

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

C

Thank you for using Return Receipt Service

RETURN RECEIPT REQUESTED
USPS® MAIL CARRIER
DETACH ALONG PERFORATION

2. Article Number

9414 7266 9904 2016 6051 44

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

Arditha Morris Woods
5120 Jewel Street
Houston, TX 77026-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP

PS Form 3811, January 2005 Domestic Return Receipt

Thank you for using Return Receipt Service

Mac

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

June 10, 2015

Certified Article Number
9414 7266 9904 2016 6051 44
SENDERS RECORD

Arditha Morris Woods
5120 Jewel Street
Houston, TX 77026

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

RE: Request for Agreement for Restrictive Covenant on 5120 Jewel Street for Union Pacific Railroad Company – Houston Wood Preserving Works Facility, 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to

prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting was held on September 11, 2014 at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street. There we provided more information and answered questions the residents had. Your property has been recently added to the affected area. If you have any questions for UPRR, please direct your questions to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197, or to Paul A. Shanklin, Connelly Baker Wotring, 700 JPMorgan Chase Tower, 600 Travis, Houston, Texas 77002, 713-980-1737. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 97

HCAD ID - 0140390000005

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3120 Fontinot St, Houston,TX 77026 (Map ID 97, HCAD ID 0140390000005)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[91]				Property Ownership		Anticipated Filing Date[92]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[91] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[92] Specify date or amount of time after RAP approval.

CERTIFIED MAIL

FIRST • CLASS

FIRST • CLASS

FIRST • CLASS

9414 7266 9904 2016 6051 51

RETURN RECEIPT REQUESTED

U.S. POSTAGE

ZIP 77002
02 1M
000139484

First Class Mail

NIXIE 770262110-1N 300 06/17/15
RETURN TO SENDER
VACANT
UNABLE TO FORWARD
RETURN TO SENDER

CBW

CONNELLY · BAKER · WOTRING LLP
700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Estate of Thelma Mae Lee
3120 Fontinot Street
Houston, TX 77026-

First Class Mail

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

C

Thank you for using Return Receipt Service

RETURN RECEIPT REQUESTED
USPS® MAIL CARRIER
DETACH ALONG PERFORATION

2. Article Number

9414 7266 9904 2016 6051 51

3. Service Type **CERTIFIED MAIL®**

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

1. Article Addressed to:

Estate of Thelma Mae Lee
3120 Fontinot Street
Houston, TX 77026-

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery

C. Signature

X ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

Reference Information

1068-14 HWP

PS Form 3811, January 2005 Domestic Return Receipt

Thank you for using Return Receipt Service

FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

June 10, 2015

Certified Article Number
9414 7266 9904 2016 6051 51
SENDERS RECORD

Estate of Thelma Mae Lee
3120 Fontinot Street
Houston, TX 77026

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

RE: Request for Agreement for Restrictive Covenant on 3120 Fontinot Street for Union Pacific Railroad Company – Houston Wood Preserving Works Facility, 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Sir or Madam:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to

prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting was held on September 11, 2014 at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street. There we provided more information and answered questions the residents had. Your property has been recently added to the affected area. If you have any questions for UPRR, please direct your questions to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197, or to Paul A. Shanklin, Connelly Baker Wotring, 700 JPMorgan Chase Tower, 600 Travis, Houston, Texas 77002, 713-980-1737. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

MAP ID - 100

HCAD ID - 0651290800938

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.
Specify the property for which this applies. **3300 E Lockwood Dr, Houston,TX 77026 (Map ID 100, HCAD ID 0651290800938)**
Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[97]				Property Ownership		Anticipated Filing Date[98]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		**X**				**X**	**Within 120 days of RAP approval**
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))		**X**				**X**	**Within 120 days of RAP approval**
Document the demonstration of technical impracticability (§350.33(f)(3)(F))		**X**				**X**	**Within 120 days of RAP approval**
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[97] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[98] Specify date or amount of time after RAP approval.

FIRST • CLASS

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7004 1160 0007 3772 1851

US POSTAGE

ZIP 77002

02 1M

0001504549

First Class Mail

CBW

CONNELLY · BAKER · WOTRING LLP

700 JPMORGAN CHASE TOWER, 600 TRAVIS STREET
HOUSTON, TEXAS 77002

Robert Damian
7938 Capitol St
Houston, TX 77012-1649

NO. IL FF
9-2
2309

NIXIE 770122021-1N 10/11/14

RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD
RETURN TO SENDER

First Class Mail

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Damian

3300 E Lockwood Dr

Houston, TX 77026-1811

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article N *(Transfer* 7004 1160 0007 3772 1851

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

DuPont™ Tyvek® Protect What's Inside.™ 2 HDPE

Made in USA

FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS FIRST • CLASS

Geoffrey Reeder, P.G.
Manager, Environmental Site Remediation

Union Pacific Railroad
24125 Aldine Westfield Rd., Spring, TX 77373
Ph. 281 350 7197 fax 402 233 2351
gbreeder@up.com

August 29, 2014

Robert Damian
7938 Capitol St
Houston, TX 77012-1649

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
AND REGULAR MAIL

Re: Request for Agreement for Restrictive Covenant on 3300 E Lockwood Dr for Union Pacific Railroad Company – Houston Wood Preserving Works Facility 4910 Liberty Road, Houston, TX, Post-Closure Care Permit No. HW-50343, TCEQ SWR No. 31547

Dear Mr. Damian:

As you may know, the Union Pacific Railroad Company ("UPRR") has been conducting on-going environmental investigations at the Former Houston Wood Preserving Works Facility ("HWPW") located at 4910 Liberty Road in Houston, Texas. UPRR has previously provided information to landowners that it could identify in the vicinity of the HWPW about the work being performed, including information regarding chemicals of concern ("COCs") identified in the groundwater under or near their properties.

It is important to note that no groundwater drinking wells have been identified in the area and ***none*** of the properties in the area use the groundwater for drinking or irrigation. All of the properties receive drinking water provided by the City of Houston from water supplies outside the area.

Laboratory analytical data of groundwater samples have revealed concentrations of COCs in the shallow groundwater under the Site, and other properties in the area, in excess of the Texas Commission on Environmental Quality ("TCEQ") Human Health Tier 1 Protective Concentration Levels ("PCLs") for Residential Land Use. Data from a groundwater monitoring well near the HWPW indicates that your property is one of the properties in the area. In order to ensure that the shallow groundwater is not used in the future, we are contacting you and other landowners in the area to request that you execute a document called a restrictive covenant which would prohibit use of the shallow groundwater on your property.

This restrictive covenant would be filed in the property records as part of planned work at the Site to institute a Plume Management Zone ("PMZ"). The purpose of the

PMZ is to manage the COCs in the shallow groundwater (between 10 and 80 feet below the ground surface) to prevent human exposure and to protect other groundwater resources. In order to institute the PMZ, notice must be placed in the county deed records of a restriction from use of this shallow groundwater.

A copy of the restrictive covenant form is attached as Exhibit A to this letter. The purpose of this restrictive covenant is to give notice to anyone purchasing the property in the future of the restriction on the use of the shallow groundwater located beneath your property. As noted, your property currently receives water service from the City of Houston. This will not change. The groundwater beneath your property which will be restricted under this covenant is not currently being used, nor is there a likely use for it in the future. Therefore, the requested covenant will not affect the current or expected future use of the property.

In appreciation of your willingness to enter the restrictive covenant, UPPR intends to offer appropriate compensation for the agreement to file the restrictive covenant.

Someone from UPRR will be contacting you in the near future to discuss the proposed restrictive covenant and to answer any questions you may have about the procedure. A public meeting has also been scheduled for September 11, 2014 at 7 p.m. at the Greater True Vine Missionary Baptist Church at 3010 Fontinot Street to provide more information and to answer any questions you may have. In the meantime, any questions you have for UPRR should be directed to Mr. Geoffrey Reeder, UPRR Environmental Site Remediation Manager, 24125 Aldine Westfield Road, Spring, Texas 77373, (281) 350-7197. If you have any other questions regarding the request for a restrictive covenant, you may also contact the TCEQ Office of the Public Interest Counsel by phone at 512-239-6363, or facsimile 512-239-6377, or write to Office of Public Interest Counsel, MC 105, TCEQ, P.O. Box 13807, Austin, TX 78711-3087.

Sincerely,

Geoffrey Reeder, P.G.

Enclosure

APPENDIX 6

SAMPLING PROCEDURES - PROPOSED GROUNDWATER SAMPLING AND ANALYSIS PLAN

SEE RCRA PERMIT PART B COMPLIANCE PLAN ATTACHMENT XI.C FOR SAMPLING AND ANALYSIS PLAN (SAP)

APPENDIX 7

STATISTICAL METHODOLOGY

APPENDIX 7 – STATISTICAL OR GEOSTATISTICAL METHODOLOGIES

The statistical methodologies that will be employed at the Union Pacific Railroad (UPRR) Houston Wood Preserving Works (HWPW) Site include the following:

1. Calculating statistical trends for chemicals of concern (COCs) in groundwater to evaluate potential increases in COCs; and
2. Calculating 95% upper confidence levels (UCLs) to demonstrate compliance with direct exposure criteria for surface soils.

Other statistical approaches may be used as appropriate for soil and groundwater data. The two approaches listed are discussed below.

Groundwater Trend Analysis

As part of the response action to address COCs in groundwater, monitored natural attenuation (MNA) is proposed to address the groundwater protective concentration limit (PCL) exceedance (PCLE) Zones identified at the Site. Trend analysis may be necessary to evaluate increasing trends when groundwater concentrations at the alternate points of exposure (POE) wells exceed the critical PCLs. Two approaches that may be conducted to evaluate statistical trends include the following:

- The Mann-Kendall Analysis; and
- Linear Regression Analysis

The selection of the statistical method will be assessed based on the data set. Typically, the Mann-Kendall test for trend is a nonparametric test that has no distributional assumptions and irregularly spaced measurement periods are permitted, where the Linear Regression is a parametric statistical procedure that is used for analyzing trends in data over time. However, other statistical approaches may also be used to evaluate trends. Details of the Mann-Kendall and linear regression analyses are provided below.

Mann-Kendall Analysis

General

The Mann-Kendall test is a non-parametric statistical procedure that is well suited for analyzing trends in data over time (Gilbert, 1987). The Mann-Kendall test can be viewed as a nonparametric test for zero slope of the first-order regression of time-ordered concentration data versus time. The Mann-Kendall test does not require any assumptions as to the statistical distribution of the data (e.g. normal, lognormal, etc.) and can be used with data sets which include irregular sampling intervals and missing data. The Mann-Kendall test is designed for analyzing a single groundwater constituent, multiple constituents are analyzed separately.

Mann-Kendall Statistic (S)

The Mann-Kendall statistic (S) measures the trend in the data. Positive values indicate an increase in constituent concentrations over time, whereas negative values indicate a decrease in constituent concentrations over time. The strength of the trend is proportional to the magnitude of the Mann-Kendall Statistic (i.e., larger magnitudes indicate a stronger trend).

Data for performing the Mann-Kendall Analysis should be in time sequential order. The first step is to determine the sign of the difference between consecutive sample results. $Sgn(x_j - x_k)$ is an indicator function that results in the values 1, 0, or –1 according to the sign of $x_j - x_k$ where $j > k$, the function is calculated as follows

$sgn(x_j - x_k) = 1$ if $x_j - x_k > 0$
$sgn(x_j - x_k) = 0$ if $x_j - x_k = 0$
$sgn(x_j - x_k) = -1$ if $x_j - x_k < 0$

The Mann-Kendall statistic (S) is defined as the sum of the number of positive differences minus the number of negative differences or

$$S = \sum_{k=1}^{n-1} \sum_{j=k+1}^{n} \operatorname{sgn}\left(x_j - x_k\right).$$

The confidence on the Mann-Kendall statistic can be measured by assessing the S result along with the number of samples, n, to find the confidence in the trend by utilizing a Kendall probability table found in many statistical textbooks (e.g. Hollander, M. and Wolfe, D.A., 1973). The resulting confidence in the trend is applied in the Mann Kendall trend analysis.

Average

The arithmetic mean of a sample of n values of a variable is the average of all the sample values written as

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Standard Deviation

The standard deviation is the square root of the average of the square of the deviations from the sample mean written as

$$s = \sqrt{\frac{\sum_{i=1}^{n} \left(x_i - \bar{x}\right)^2}{n-1}}.$$

The standard deviation is a measure of how the value fluctuates about the arithmetic mean of the data.

Coefficient of Variation (COV)

The Coefficient of Variation (COV) is a statistical measure of how the individual data points vary about the mean value. The coefficient of variation, defined as the standard deviation divided by the average or

$$C.O.V. = \frac{s}{\bar{x}}$$

Values less than or near 1.00 indicate that the data form a relatively close group about the mean value. Values larger than 1.00 indicate that the data show a greater degree of scatter about the mean.

Interpretation of Results: Mann-Kendall Analysis

- The COV is a statistical measure of how the individual data points vary about the mean value. Values less than or near 1.00 indicate that the data form a relatively close group about the mean value. Values larger than 1.00 indicate that the data show a greater degree of scatter about the mean.

- The Mann-Kendall statistic (S) measures the trend in the data. Positive values indicate an increase in constituent concentrations over time, whereas negative values indicate a decrease in constituent concentrations over time. The strength of the trend is proportional to the magnitude of the Mann-Kendall Statistic (i.e., larger magnitudes indicate a stronger trend).

- The "Confidence in Trend" is the statistical confidence that the constituent concentration is increasing (S>0) or decreasing (S<0).

- The "Concentration Trend" for each well is determined according to the following rules, where COV is the coefficient of variation:

MANN-KENDALL ANALYSIS DECISION MATRIX

Mann-Kendall Statistic	Confidence in Trend	Concentration Trend
S > 0	> 95%	Increasing
S > 0	90 - 95%	Probably Increasing
S > 0	< 90%	No Trend
S ≤ 0	< 90% and COV ≥ 1	No Trend
S ≤ 0	< 90% and COV < 1	Stable
S < 0	90 - 95%	Probably Decreasing
S < 0	95%	Decreasing

Linear Regression Analysis

General

As discussed in the EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (EPA, 2009), a common method to measure a linear trend is to compute a linear regression of concentration data when plotted against the time or date of sample collection. Each point along a linear regression trend line is an estimate of the true mean concentration at that point in time. Therefore, a linear regression can be used to assess whether or not the population mean at an alternate point of exposure (POE) well has significantly increased or decreased.

Linear regression is valid if the data set is parametric. Other assumptions for using the statistical technique is that the difference between each concentration measurement and its predicted value from the regression equation are approximately normal in distribution and homoscedastic (*i.e.*, equal in variance at different times and for different mean concentration levels). Significant skewness or the presence of outliers can invalidate the trend analysis based on linear regression. Also, standard linear regression methods do not account for non-detects or missing data values at selected sampling events. Therefore, linear regression is best used for data sets that have few if any non-detects (EPA, 2009).

A minimum of 8 to 10 measurements is generally necessary to compute a linear regression. The regression residuals should be statistically independent and the analysis should be based on reliably quantified measurements. If not, a calculated "trend" may be an artifact induced by changes in quantitation limits over time. Such artifacts of plotting and data reporting should not be considered real trends.

The procedures for calculating the linear regression are taken from the EPA Unified Guidance (EPA, 2009):

Step 1. Construct a time series plot of the compliance point measurements. If a discernible trend is evident, compute a linear regression of concentration against sampling date (time), letting x_i denote the *i*th concentration value and *t*i denote the *i*th sampling date. Estimate the linear slope $\hat{b}$ with the formula:

$$\hat{b} = \sum_{i=1}^{n} \frac{(t_i - \bar{t})x_i}{n-1} \times s_i^2$$

This estimate then leads to the regression equation, given by:

$$\hat{x_i} = \bar{x} + \hat{b}\,(t - \bar{t}\,)$$

where $\bar{t}$ denotes the mean sampling date, s_t^2 is the variance of sampling dates, $\bar{x}$ is the mean concentration level, and $\hat{x_i}$ represents the estimated mean concentration at time *t*.

Note: though the variable *t* above represents time, it could just as easily signify another variable, perhaps a second constituent for which an association with *x* is estimated.

Step 2. Compute the regression residual at each sampling event *i* with equation:

$$r_i = x_i - \hat{x_i}$$

Check the set of residuals for lack of normality and significant. Also, plot the residuals against the estimated regression values ($\hat{x_i}$) to check for non-uniform vertical thickness in the scatter cloud. Make a similar check by plotting the residuals against the sampling dates (t_i).

If the residuals are non-normal and substantially skewed and/or the scatter clouds appear to have a definite pattern (*e.g.*, funnel-shaped; "U"-shaped; or, residuals mostly positive on one end of graph and mostly negative on the other end, instead of randomly scattered around the horizontal line $r = 0$), repeat **Steps 1** and **2** after first attempting a normalizing transformation.

Step 3. Calculate the estimated variance around the regression line (also known as the *mean squared error* [MSE]) with the following equation:

$$s_e^2 = \frac{1}{n-2} \sum_{i=1}^{n} r_i^2$$

Step 4. Compute the standard error of the linear regression slope coefficient using the s_e^2 result from Step 3.

$$se(\hat{b}) = \sqrt{s_e^2 / \sum_{i=1}^{n} (t - \bar{t})^2}$$

Step 5. Test whether the trend is significantly different from zero by forming the *t*-statistic ratio in the following equation:

$$t_b = \hat{b} / se(\hat{b})$$

This *t*-statistic (t_b) has *n*–2 degrees of freedom [*df*]. Given a level of significance (α), choose the critical point (t_{cp}) for the test as the (1– α) × 100th percentage point of the Student's *t*-distribution with (*n*–2) *df* or $t_{cp} = t_{1-\alpha,n-2}$. Compare t_b against the critical point. If $t_b > t_{cp}$, conclude that the slope of the trend is both positive and significantly different from zero at the α-level of significance. If $t_b < -t_{cp}$, conclude there is a significant decreasing trend. If neither exists, there is insufficient evidence of an increasing or decreasing trend.

Both of these calculations can be conducted using various computer statistical software. One approach is to use the Monitoring and Remediation Optimization System (MAROS) Software (AFCEE, 2006) or U.S. Environmental Protection Agency (EPA) ProUCL software program (EPA, 2013).

Statistical Determination of 95% Upper Confidence Limit (UCL) for COC Concentrations in Surface Soils

As discussed in the Response Action Plan (RAP), surface soils with cPCL exceedances in the Southern Disposal Ditch (SDD) (SWMU 2), Inactive Wastewater Lagoon (AOC 6), and areas north of the AST Area (SWMU 8) will be consolidated in the area of SWMUs 4, 5, and 8 using the EPA Area of Contamination (AOC) policy. As allowed under the EPA AOC policy, soils may be consolidated within the AOC (defined at the Site as the "Affected Property") and not be considered to be removed from the land or generated. Based on the current areas delineated, the estimated volume of soil to be consolidated from these areas is approximately 23,000 cubic yards. However, prior to consolidation of the soils and construction of the cap, additional soil samples will be collected to refine the surface soil PCLE Zone to ensure the proper area of excavation and cap area construction (see RAP Attachments 2A-1a and 2A-1b).

Additional soil sampling will be conducted to evaluate the representative concentrations of chemicals of concern (COCs) in surface soil using statistics assuming a ½-acre default area for the current surface soil PCLE Zone near the Inactive Waste Water Lagoon (AOC 6) and the southern end of the SDD (SWMU 2) in accordance with 30 TAC §350.51(l). The proposed additional sampling was developed based on at least eight surface soil samples collected within a ½-acre exposure area.

In accordance with 30 TAC§350.79(2)(A), the statistical test will be performed to determine if COCs in surface soils at the Site exceeded the critical PCL ($^{Tot}SOIL_{Comb}$) established during the critical PCL development process conducted as part of the APAR (PBW, 2010). 30 TAC§350.79(2)(A) states that the requirement of a response action may be determined by using an appropriate statistical method. The statistical method identified in the TRRP rule is as follows:

(i) The null hypothesis (H_o) is that the mean of the COC concentrations in the affected property is equal to or greater than the critical PCL;
(ii) The alternative hypothesis (H_a) is that the mean COC concentration is less than the critical PCL;
(iii) The test is performed at a Type I error rate of 5%; and
(iv) Any statistical model used for testing this hypothesis set must be demonstrated to meet these performance standards.

For the surface soil COCs, the analysis will be performed to determine the mean concentration in surface soils in the area of AOC 6 with a Type I error rate of 5%. This analysis will be performed using the EPA's ProUCL software program (EPA, 2013) to calculate a distribution-free (i.e., nonparametric) 95% upper confidence limit (UCL) concentration from the selected data set, including non-detect concentration values (i.e., represented by the sample quantitation limit). ProUCL calculates various types of the 95% UCLs, and then makes a recommendation for the most appropriate UCL type. The 95% UCL of the arithmetic mean for each ½-acre study area will be calculated using ProUCL. Soil data sets will be evaluated for outliers to identify hot spots for excavation. The statistical analysis will evaluate removal of hot spot areas and reassess the 95% UCL for a given COC to the cPCL for that exposure area. The primary COC in this area defining the PCLE Zone is benzo(a)pyrene, which limiting PCL is the $^{Tot}Soil_{Comb}$ PCL.

References

U.S. Air Force Center for Environmental Excellence (AFCEE), 2006. Monitoring and Remediation Optimization System (MAROS) Software Version 2.2 User's Guide. Groundwater Services, Inc., University of Houston, and AFCEE Technology Transfer Division. March 2006.

U.S. Environmental Protection Agency (EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance, March.

EPA, 20013. ProUCL Statistical Support Software for Site Investigation and Evaluation, Version 5.0.00, September.

Gilbert, R. O., 1987, *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York, NY, ISBN 0-442-23050-8.

Hollander, M. and Wolfe, D.A., 1973, *Nonparametric Statistical Methods*, Wiley, New York, NY.

Pastor, Behling & Wheeler, LLC (PBW), 2010. Updated Affected Property Assessment Report (APAR) Addendum. October 2010.

APPENDIX 8

SPLIT MEDIA APPROVAL
(NOT APPLICABLE)

PART A PERMIT RENEWAL

REPLACEMENT PAGE

Table III-1 Hazardous Wastes and Management Activities

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Soil generated primarily by the boring of monitor wells around the clean-closed wood preserving operation surface impoundment.	0001301H	F034 K001				X			0
Aqueous Waste with low surfactants. Groundwater generated from drilling activities for investigative purposes.	0909101H	F034 K001				X			0
Creosote sludge, soil mixture generated as part of corrective action performed on-site.	0912489H	F034 K001				X			0
Groundwater generated from purging of various monitor wells for investigative purposes.	0914101H	F034 K001				X			1020 lbs
Soil derived from the boring of monitor wells for investigative purposes.	0915301H	F034 K001				X			0
Plastic and used personal protective equipment generated as a result of monitor well and/or soil sampling.	0917406H	F034 K001				X			0
Spent Solvent	0501203H	D001 D018 D039				X			0
Recovered creosote NAPL from groundwater monitoring wells	0918219H	F034 K001 U051				X			750 lb

Table III-1 Hazardous Wastes and Management Activities (continued)

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Drilling mud from boring monitor wells for investigative purposes	1481514H	D002				X			0
Purge water generated as part of groundwater monitoring and investigation	1482110H	D002				X			0
Wood treatment (creosote) related wastes	488, 609	U188				X			0

[1]"Storage" means the holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, or stored elsewhere.

[2]"Processing" means the extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of hazardous waste, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material from the waste or so as to render such waste non-hazardous or less hazardous; safer for transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. The "transfer" of solid waste for reuse or disposal as used above, does not include the actions of a transporter in conveying or transporting solid waste by truck, ship, pipeline, or other means. Unless the Executive Director determines that regulation of such activity is necessary to protect human health or the environment, the definition of "processing" does not include activities relating to those materials exempted by the Resource Conservation and Recovery Act, 42 U.S.C. 6901 **et seq.**, as amended.

PART B PERMIT RENEWAL

SECTION I – REPLACEMENT PAGES

D. Application Type and Facility Status

1. ☒ permit ☒ amendment ☐ modification
☐ new ☒ major ☐ Class 3
☐ interim status ☐ minor ☐ Class 2
☒ renewal ☐ Class 11
☐ RD&D ☐ Class 1
☒ Compliance Plan

2. Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?
☐ Yes ☒ No
If Yes, state the other TCEQ program authorizations requested.

3. Does the application contain confidential material? ☐ Yes ☒ No

If Yes, cross-reference the confidential material throughout the application to Section XIII: Confidential Material, and submit as a separate Section XIII document or binder conspicuously marked "CONFIDENTIAL".

4. In either column, check all that apply.

☐ proposed hazardous waste management facility	☒ existing hazardous waste management facility
☐ on-site	☒ on-site
☐ off-site	☐ off-site
☐ commercial	☐ commercial
☐ recycle	☐ recycle
☐ land disposal	☐ land disposal
	☐ areal or capacity expansion
	☒ compliance plan

5. Is the facility within the Coastal Management Program boundary (for Class 3 Modifications, Permit Renewals, and New Permit applications only)? ☐Yes. ☒No.

6. Provide a brief description of the portion of the facility covered by this application, including the changes for which an amendment or modification is requested.

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit			
Global~~Permit Section I~~	Global Facility~~Information was updated, including changing the Site~~ name change from Union Pacific Railroad Company Houston Tie Plant to Houston to Union Pacific Railroad Company Houston Wood Preserving Works~~.~~	~~Minor Amendment~~Class 1 Modification	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit Cover Page	Registered Agent for Service changed to: C T Corporation System 1999 Bryan Street, Suite 900 Dallas, TX 75201-3136 Phone: 214-979-1172	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision I.A. Attachment A	The legal description has been updated for the Facility.	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision I.A. Attachment B	The Facility Plan has been updated	Class 1 Modification	30 TAC §305.62(c)(2)
Permit Provision III.D. Table III.D.-Inspection Schedule	Table was updated	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision VII.C.1. Post-Closure financial Assurance Requirements	Revised to reflect updated post-closure costs. 2015 costs to closure are estimated to be $201,050.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision VII.C.1. Table VII.E.1. – Permitted Unit Post Closure Cost Summary	Table revised to reflect updated post-closure costs.	Minor Amendment	30 TAC §305.62(c)(2)
Compliance Plan			
Compliance Plan Cover Page	Name of Permittee and Site Owner – address changed (this information was changed in a 2012 permit modification, however an updated permit was not issued): Union Pacific Railroad Company 1400 Douglas St., STOP 1030 Omaha, NE 68179	Class 1 Modification	30 TAC §305.62(c)(2)
Compliance Plan Cover Page	Registered Agent for Service changed to: C T Corporation System 1999 Bryan Street, Suite 900 Dallas, TX 75201-3136 Phone: 214-979-1172	Class 1 Modification	30 TAC §305.62(c)(2)
Compliance Plan Provision I.B. Attachment A	Attachment A was updated to reflect current site conditions.	Minor Amendment	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Compliance Plan Provision I.B. Table I – Waste Management Units Subject to Groundwater Corrective Action and Compliance Monitoring	Table revised to include SWMU and AOC subject to corrective action (section C.).	Major Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision I.D. Table II – Solid Waste Management Units and/or Areas of Concern Addressed for which Corrective Acton applies	Table updated to latest format which includes information on affected media.	Minor Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision II.A. Table V – Designation of Wells	Table V was updated to reflect current site conditions – Point of Compliance and Background Wells were removed while Alternate Point of Exposure Wells (PMZ Wells) were added.	Major Amendment	30 TAC §305.62(c)(2)
Compliance Plan Provision II.A. Table III – Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard	Table III was updated to reflect current site conditions – the table was expanded to include the On-Site PMZ,	Minor Amendment	30 TAC §305.62(c)(2)
Application Updates			
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section II~~Permit Section II~~	Section II.A – Facility Siting information ~~Information~~ was updated ~~to include the most recent Flood Insurance Map~~.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section II	Figure II.F.1 – Information was updated to include the most recent Flood Insurance Map.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section III~~Permit Section III~~	~~Inspection of SWMU 1 ceases, quarterly inspection of facility.~~Sections III.A, C, and D were updated to reflect current site conditions.	Minor Amendment	30 TAC §305.62(c)(2)

Permit/Compliance Plan Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section V Permit Section V	Information was updated and expanded to reflect the current Site boundary, conditions at the Site, address typographical errors, and administrative changes.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section VI Permit Section VI	Information was updated to reflect current conditions at the Site and include investigative data collected since the previous permit update in 2003.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section VII Permit Section VII	Information was updated to reflect current conditions at the Site including the change to Compliance Monitoring a request for the termination of sampling activities at SWMU No. 1 in accordance with TRRP Remedy Standard A. Post closure care activities were updated. then include only the plugging and abandonment of the eight monitoring wells associated with SWMU No. 1.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section IX Permit Section IX	The checklist information was consolidated from other sources and included in the permit.	Minor Amendment	30 TAC §305.62(c)(2)
Permit Provision I.B. – Incorporated Application Materials: Permit Application Section XI Permit Section XI	Information was updated and expanded to reflect the current Site conditions, include the request for the termination of Compliance Monitoring sampling activities at SWMU No. 1 and include the Response Action Plan prepared to address the facility wide soil and groundwater contamination.	Class 3 Modification Major Amendment	30 TAC §305.69(k)(C)(7)(a) and (b) 30 TAC §305.62(c)(1)

7. Total acreage of the facility being permitted: 128 acres

8. Identify the name of the drainage basin and segment where the facility is located:
San Jacinto River basin, Segment No. 1007

E. Facility Siting Summary

Is the facility located or proposed to be located:

1. within a 100-year floodplain?
☐ Yes ☒ No

PART B PERMIT RENEWAL

SECTION II – REPLACEMENT PAGES

II. Facility Siting Criteria

For all new hazardous waste management facilities or areal expansions of existing hazardous waste management facilities provide a Site Selection Report for the facility which includes all information regarding Unsuitable Site Characteristics found in 30 TAC 335 Subchapter G. The report must address each requirement applicable to the type of activity submitted in the application. Reference specific rule numbers whenever possible. Supporting information may be cross-referenced to other parts of this application such as Section V - Engineering Report or Section VI - Geology Report, but information submitted in previous applications must be fully reproduced herein. In addition, provide the information in Sections II.A through II.G below.

For permit renewals provide a Site Selection Report for the facility which includes all information regarding Unsuitable Site Characteristics found in 30 TAC 335 Subchapter G. In addition, provide the information in Sections II.A through II.B below. The applicant may resubmit the information submitted with the original permit application provided this information has not changed. For a renewal this information is necessary to ensure a complete application is received.

Not Applicable – Closed Surface Impoundment was closed.

Existing hazardous waste management facilities and capacity expansions of existing facilities need only complete Section II.F. and the applicable portions of II.G. Please note however, that additional technical information may be requested to address any facility siting characteristics noted in Section I.E.

A. Requirements for Storage or Processing Facilities, Land Treatment Facilities, Waste Piles, Storage Surface Impoundments, and Landfills.

~~**Not Applicable – Closed Surface Impoundment was clean closed. Request for No Further Action for the unit provided in Section VII and Section XI (Compliance Plan Attachment D).**~~

Is the facility located or proposed to be located:

1. in wetlands? [as applicable: 30 TAC 335.204(a)(2), (b)(2), (c)(2), (d)(2), and/or (e)(2)]
☐ Yes ☒ ~~☐~~ No

Provide the source of information.

According to the US Fish and Wildlife Service Wetlands Mapper (http://www.fws.gov/wetlands/Data/Mapper.html), no wetlands are located on or near the Site.

~~Provide the source of information.~~

If Yes, the TCEQ shall not issue a permit for a new hazardous waste management facility or areal expansion of an existing facility into wetlands, pursuant to 30 TAC 335.205(a)(1).

2. in the critical habitat of an endangered species of plant or animal? [as applicable: 30 TAC 335.204(a)(8), (b)(10), (c)(9), (d)(9), and/or (e)(11)]
☐ Yes ☒ ~~☐~~ No

Provide the source of information.

No appreciable ecological habitat is located at the Site.

If Yes, then submit in Section V information demonstrating that design, construction, and operational features will prevent adverse effects on such critical habitat.

3. on the recharge zone of a sole-source aquifer? [30 TAC 335.204(a)(3), (b)(3), (c)(3), (d)(3), and/or (e)(3)]
☐ Yes ☒ No

Provide the source of the information.

According the EPA Region 6, the Site does not overlie a sole-source aquifer (http://www.epa.gov/region6/water/swp/ssa/index.htm).

If Yes, then for storage and processing facilities (excluding storage surface impoundments), submit in Section V information demonstrating that secondary containment is provided to preclude migration to groundwater from spills, leaks, or discharges.

Note: Land treatment facilities, waste piles, storage surface impoundments, and landfills may not be located on the recharge zone of a sole-source aquifer.

4. in an area overlying a regional aquifer? [as applicable: 30 TAC 335.204(a)(4), (b)(4), (c)(4), (d)(4), and/or (e)(4)]
☒ Yes ☐ No

Provide the source of information.

See Section VI of the Permit Renewal Application.

If Yes, then submit site-specific information in Section V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1).

5. in areas where soil unit(s) are within five feet of the containment structure, or treatment zone, as applicable, that have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM, or a hydraulic conductivity greater than 10-5 cm/sec? [as applicable: 30 TAC 335.204(a)(5), (b)(5), (c)(5), (d)(5), and/or (e)(5)]
☐ Yes ☒ No

Provide information to verify the above.

According to the United States Department of Agriculture Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), the Site is underlain by Urban Land.

If Yes, then provide additional information in Sections V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1)

6. in areas of direct drainage within one mile of a lake at its maximum conservation pool level, if the lake is used to supply public drinking water through a public water system? [as applicable: 30 TAC 335.204 (a)(6), (b)(7), (c)(6), and/or (e)(8)].
☐ Yes ☒ No

Provide information to verify the above.

The nearest surface water body to the Site is Buffalo Bayou, located approximately 1.6 miles to the southwest. See Section VI of the Permit Renewal Application for more information.

If Yes, then provide information in Section V demonstrating compliance with 30 TAC 335.205(a)(1).

7. in areas of active geologic processes, including but not limited to erosion, submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cuttings, or earthquakes? [as applicable: 30 TAC 335.204(a)(7), (b)(8) ,(c)(7), (d)(7), and/or (e)(9)]
☐ Yes ☒ No
Provide the source of the information.

See Section VI of the Permit Renewal Application.

If Yes, then specify in Section V the design, construction, and operational features of the facility that will prevent adverse effects resulting from the geologic processes.

8. within 30 feet of the upthrown side or 50 feet of the downthrown side of the actual or inferred surface expression of a fault that has reasonably been shown to have caused displacement of shallow Quaternary sediments or of man-made structures? [as applicable: 30 TAC 335.204(a)(9), (b)(12) ,(c)(11), (d)(11), and/or (e)(13)]
☐ Yes ☒ No
Provide the source of information.

See Section VI of the Permit Renewal Application.

If Yes, then specify in Section V the design, construction, and operational features that will prevent adverse effects resulting from any fault movement.

If a fault is found to be present, the width and location of the actual or inferred surface expression of the fault, including both the identified zone of deformation and the combined uncertainties in locating a fault trace, must be determined by a qualified geologist or geotechnical engineer and reported in Section VI.

B. Additional Requirements for Land Treatment Facilities [30 TAC 335.204(b)]

Not Applicable

Is the land treatment facility located or proposed to be located:

1. Within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(6) and 335.205(a).

2. either
   a. within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.F design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

b. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.
☐ Yes ☐ No

If Yes, then submit Section V.F design, construction and operational features, which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

3. on a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(11) and 335.205(a)(1).

C. Additional Requirements for Waste Piles [30 TAC 335.204(c)]

Not Applicable

Is the waste pile located or proposed to be located:

1. either
   a. within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.E design, construction, and operational features on the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   b. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.
   ☐ Yes ☐ No

If Yes, then submit Section V.E design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

2. on a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste pile or an areal expansion of an existing waste pile, pursuant to 30 TAC 335.204(c)(10) and 335.205(a)(1).

D. Additional Requirements for Storage Surface Impoundments [30 TAC 335.204(d)]

Is the storage surface impoundment located or proposed to be located:

1. either
   c. within 1000 feet of an area of active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☒ No

If Yes, then submit in Section V.D design, construction and operational features of the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   d. within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula?
   ☐ Yes ☒ No

If Yes, then submit in Section V.D design, construction and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

2. on a barrier island or peninsula?
☐ Yes ☒ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste storage surface impoundment or an areal expansion of an existing storage surface impoundment, pursuant to 30 TAC 335.204(d)(10) and 335.205(a)(1).

E. Additional Requirements for Landfills (and Surface Impoundments Closed as Landfills with Wastes in Place)

Not Applicable

Is the landfill located or proposed to the located:

1. within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(6) and 335.205(a)(1).

2. (*for commercial hazardous waste landfills*) in the 100-year flood plain of a perennial stream that is delineated on a flood map adopted by the Federal Emergency Management Agency after September 1, 1985, as zone A1-99, VO, or V1-30?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(7) and 335.205(a)(1).

3. Either
   a. Within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?
   ☐ Yes ☐ No

If Yes, then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

   b. Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barriers island or peninsula.
   ☐ Yes ☐ No

If Yes, then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.

4. On a barrier island or peninsula?
☐ Yes ☐ No

If Yes, the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(12) and 335.205(a)(1).

F. Flooding

1. Identify whether the facility is located within a 100-year flood plain [40 CFR 270.14(b)(11)(iii)]. This identification must indicate the source of data for such determination and include a copy of relevant documentation (e.g., flood maps, if used and/or calculations). The

boundaries of the hazardous waste management facility must be shown on the flood plain map. If the facility is not subject to inundation as a result of a 100-year flood event, do not complete F.2. through F.4. below. An applicant for a proposed hazardous waste landfill, areal expansion of a hazardous waste landfill, or a commercial hazardous waste land disposal unit may not rely solely on flood plain maps prepared by the Federal Emergency Management Agency (FEMA) or a successor agency for this determination.

According to the June 9, 2014 Federal Emergency Management Agency Flood Insurance Rate Map (Map Number 48201C0690M), the facility is not located within the 100-year flood plain. The northern portion of the facility is identified as being located in an area with 0.2% chance of flooding annually. The southern portion of the Site is in an area of minimal flood hazard. Figure II.F.1 included in the attached Section II.F shows the boundaries of the facility within the flood plain map.

2. If the facility is located within the 100-year flood plain the applicant must provide information detailing the specific flooding levels and other events (e.g., Design Hurricane projected by Corps of Engineers) which impact the flood protection of the facility. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, construction, operating, or maintaining the facility to withstand washout from a 100-year flood.

   Not Applicable

3. State whether any flood protection devices exist at the facility (e.g., flood walls, dikes, etc.), designed to prevent washout from the 100-year flood.
   a. ***If Yes***, provide in Section V an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

      Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

   b. ***If No***, the applicant shall provide in Section V a plan for constructing flood protection devices and a schedule including specific time frames for completion. Provide engineering analyses to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

      Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

   Not Applicable

4. If applicable, and in lieu of the flood protection devices from above, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. [40 CFR 270.14(b)(11)(iv)(c)] The procedures should include:
   a. Timing of such movement relative of flood levels, including estimated time to move the waste, to show that such movement can be completed before flood waters reach the facility. Indicate which specific events shall be use to begin waste movement (e.g., Hurricane warning, Flash Flood watch, etc.);

b. A description of the location(s) to which the waste will be moved and a demonstration that these facilities will be eligible to receive hazardous waste in accordance with appropriate regulations (i.e., a permitted facility);
c. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use; and
d. The potential for accidental discharges of the waste during movement and precautions taken to preclude accidental discharges.

Not Applicable

G. Additional Information Requirements

1. For a new hazardous waste management facility, include a map of relevant local land-use plans and descriptions of the major routes of travel in the vicinity of the facility to be used for the transportation of hazardous waste to and from the facility covering at least a five (5)-mile radius from the boundaries of the facility. [30 TAC 305.50(a)(10)(A)&(D)]

   Not Applicable

2. For a new commercial hazardous waste management facility as defined in 30 TAC 335.202 or the subsequent areal expansion of such a facility or unit of that facility, indicate on the map the nearest established residence, church, school, day care center, surface water body used for a public drinking water supply, and dedicated public park.

   Not Applicable

3. For new commercial hazardous waste management facilities, submit the following: [30 TAC 305.50(a)(12)(A)]
   a. the average number, gross weight, type, and size of vehicles used to transport hazardous waste;
   b. the major highways nearest the facility irrespective of distance; and
   c. the public roadways used by vehicles traveling to and from the facility within a minimum radius of 2.5 miles from the facility.

   Not Applicable

4. Include the names and locations of industrial and other waste-generating facilities within 0.5 miles for a new on-site hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

   Not Applicable

5. Include the names and locations of industrial and other waste-generating facilities within 1.0 miles for a new commercial hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

   Not Applicable

6. For existing land disposal facility units provide documentation that the information required by 30 TAC 335.5 has been placed in the county deed records. If previously submitted, please reference the submittal by date and registration number.

   Submitted as part of the original Permit Application in May 1991 was the deed recordation of the removal of the wastes from the surface impoundment in accordance with the closure plan approved by the Texas Department of Water Resources in 1984. A copy of that Deed Notice is included as Attachment II.G.6.
   ~~Not Applicable~~

7. If a surface impoundment or landfill (including post-closure) is to be permitted, provide exposure information to accompany this application and in accordance with 30 TAC 305.50(a)(8) and 40 CFR 270.10(j). This information will be considered separately from the TCEQ application completeness determination.

   Not Applicable – Hazardous waste is not stored, treated or disposed in the closed surface impoundment. In 1984 surface impoundment was ~~clean~~ closed by excavating the soils and materials contained within. Groundwater at the SWMU No. 1 has achieved TCEQ Remedy Standard A response action objectives. Based on the removal~~See Section VII and Section XI (Compliance Plan Attachment D) for details~~ of the wastes from the unit, including the clay liner, and groundwater that meets Remedy Standard A, there are no potential pathways of human exposure to hazardous wastes or constituents resulting from documented releases related to SWMU No. 1.~~NFA request for the closed surface impoundment.~~

8. For a requested capacity expansion of an existing hazardous waste management facility, please provide in Section VI.A.1.a the requested fault delineation information. [30 TAC 305.50(a)(4)(F)]

   Not Applicable

PART B PERMIT RENEWAL

SECTION III – REPLACEMENT PAGES

III. Facility Management

A. Compliance History and Applicant Experience

See the attached report for specific information regarding the Compliance History and Applicant Experience.

Provide listings of all solid waste management sites in Texas owned, operated, or controlled by the applicant as required by 30 TAC 305.50(a)(2).

For a new commercial hazardous waste management facility, provide a summary of the applicant's experience in hazardous waste management as required by 30 TAC 305.50(a)(12)(F).

B. Personnel Training Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit.

Provide an outline of the facility training plan which includes all the information required by 40 CFR 264.16. Indicate which training will be repeated annually.

C. Security

See the attached report for specific information regarding the plan for Site security.

Describe how the facility complies with the security requirements of 40 CFR 264.14 or submit a justification demonstrating the reasons for requesting a waiver of these requirements.

D. Inspection Schedule

See the attached report for specific information regarding the Site inspection schedule.

Provide an inspection schedule summary for the facility which reflects the requirements of 40 CFR 264.15(b), 264.33 and, where applicable, the specific requirements in 40 CFR 264.174, 264.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.347, 264.552, 264.574, 264.602, 264.1033(f), 264.1034, 264.1052, 264.1053(e), 264.1057, 264.1058, 264.1063, 264.1084, 264.1085, 264.1086, 264.1088, 264.1101(c)(4) and 270.14(b)(5). The inspection schedule should reflect the requirements described below. The schedule should encompass each type of hazardous waste management (HWM) unit (i.e., facility component) and its inspection requirements. For incorporation into a permit, complete Table III.D. - Inspection Schedule for all units to be permitted.

The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to the release of hazardous waste constituents to the environment or which may pose a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

The owner or operator must develop and follow a written schedule for inspecting other basic elements such as monitoring equipment, safety and emergency equipment, security devices, the presence of liquids in leak detection systems, where installed, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

If the owner or operator of a facility which contains a waste pile wishes to pursue an exemption from the groundwater monitoring requirements for that waste management unit, the inspection schedule must

include examination of the base for cracking, deterioration, or other conditions that may result in leaks. The frequency of inspection must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and subsurface stability).

E. Contingency Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit at an inactive facility.

(This portion of the application does not apply to post closure applications.) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this section. Provide a Contingency Plan which includes all the information required by 40 CFR Part 264 Subparts C and D, except for 40 CFR 264.56(d)(1) and 30 TAC 335.153(2). This plan must also include a drawing of the facility which shows the location of all emergency equipment. In addition, complete the following tables to summarize information expressed in more detail in the plan.

1. Arrangements with Local Authorities

   Complete Table III.E.1. - Arrangements With Local Authorities to indicate arrangements (if made) with local authorities to familiarize local fire and police departments, local hospitals, equipment suppliers, and local and State emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes. Provide documentation of the attempts and any arrangements made with local authorities and emergency response teams.

2. Emergency Coordinator's List

   For inclusion into a permit, list in Table III.E.2. - Emergency Coordinators the persons qualified to act as emergency coordinator. List the alternates in the order in which they will assume responsibility.

3. Emergency Equipment List

   For inclusion into a permit, list in Table III.E.3. - Emergency Equipment all types of emergency equipment at the facility [such as fire-extinguishing systems, spill-control equipment, communications and alarm systems (internal and external), and decontamination equipment], if this equipment is required. Briefly outline the equipment capabilities.

4. Waiver from Preparedness and Prevention Requirements

   If the owner or operator wishes to request a waiver from any of the preparedness and prevention requirements, he must submit a justification demonstrating the reasons for requesting the waiver, as discussed below.

F. Emergency Response Plan

Not Applicable – This application is a renewal of a post-closure application for a closed unit at an inactive facility.

For a new commercial hazardous waste management facility, the application shall contain evidence sufficient to demonstrate that emergency response capabilities are available or will be available before the facility first receives waste. An emergency response plan must be provided which satisfies the requirements of 30 TAC 305.50(a)(12)(C) and (D). This plan must show that the proposed facility has sufficient emergency response capabilities for managing a reasonable worst-case emergency condition associated with the operation of the facility. (For financial assurance requirements associated with the emergency response activities, please see Section VIII.C.3.)

1. Practice Drills

   In addition to the contingency plan required under 40 Code of Federal Regulations Part 270.14(b)(7), provisions specifying procedures and timing of practice facility evacuation drills are required. Provide a description and a frequency for facility evacuation drills.

2. If a private corporation, municipality or county group will provide emergency response actions at the proposed facility, include a copy of the contract for this type of agreement with this application or state that documentation will be submitted before the facility accepts wastes.

3. Historical weather data for the area should be documented and submitted. Information regarding how emergency response operations may be affected by weather conditions should be included. (Local rainfall extremes, average rainfall amounts, average wind speeds and directions, potential for major weather events such as hurricanes, tornados, icy conditions, flash flooding etc., should be addressed.)

4. A definition of a worst-case emergency for the proposed facility should be described in the application. This worst-case emergency should take into account the possible complications involved with a facility emergency compounded by adverse weather conditions. It should also detail spills, fires, explosions, etc. This worst case scenario should be developed with the help of local governmental entities where possible. Emergency planning should include both unexpected emergencies and emergencies occurring as a result of a predictable event such as a flood or hurricane. For areas which are prone to hurricanes and flash flooding, the worst case which allows for a realistic situation should be used. For example, response teams should be well versed in reacting to events such as a 100-year flood.

5. A training program for personnel who will respond to these types of emergencies must be provided and must include the requirements described in OSHA Federal Register 1910 and EPA Federal Register 311, the Texas Hazard Communication Act, SARA Title III 302, 304, 311, 312, and 313. If emergency response actions are contracted out, the contracted employees must be properly trained and documentation of this training must be maintained on-site. All responders to emergencies at the proposed facility must be involved in training and drills at the facility in order to be thoroughly familiar with the facility and its operations.

6. The application must include a description and identification of first-responders (i.e. all pertinent facility personnel, local responders, and contractors). The duties of the facility employee who is to be the on-scene coordinator (OSC) must be described. Additional information must be provided detailing the OSC's role in the emergency response activities. This person must have the authority to commit the resources needed to carry out the Emergency Response Plan. His duties must be thoroughly described so that it is clear whether he will remain in control once the emergency response team arrives or whether he will relinquish control to another incident commander upon that person's arrival on the scene. Additionally, there must be a qualified OSC on-site or on call 24 hours a day. The name, address and phone numbers (home and work) of the OSC(s) must be listed in the Emergency

Response Plan. Where more than one person is listed, one must be named as the primary OSC and others must be listed in the order in which they will assume responsibility as alternates.

7. Local or regional emergency medical services or hospitals which have experience in hazardous materials training must be identified in the application. The names, addresses and phone numbers of the hospitals or medical centers should be listed here and updated as necessary. Additionally, maps showing the quickest routes to the medical services must be provided. A description of decontamination procedures for injured personnel prior to transport to medical services must also be provided. The decontamination and transport of injured people to appropriate medical centers must be included in the emergency evacuation training and drills.

8. A pre-disaster plan which includes training drills must be included in the application. This plan should include a schedule for staging evacuations of the facility and for emergency response training drills. At least two evacuations and two emergency response drills should occur annually. The plan should also include additional drills for responding to "predictable" emergencies such as floods and hurricanes. The plan must include the following (or must reference applicable sections of the Contingency Plan): a description of arrangements already in place with local authorities; emergency phone numbers; internal communication or alarm systems and proper alarm codes; a list of all types of emergency equipment at the facility, including a physical description and the capabilities of each item on the list, and the location of each item (a map would be useful here); a description of decontamination equipment; an evacuation plan including signals, evacuation routes and alternate evacuation routes; listing of pertinent first responder emergency phone numbers, and codes for other types of communication devices; and a description of actions that will be performed in the event that a "predictable" emergency occurs.

9. Describe the mechanism which will be used to notify first responders and appropriate local governmental entities that an emergency has occurred. Also describe the mechanism which will be used to notify all applicable governmental agencies when an incident occurs (i.e., TCEQ, Texas Parks and Wildlife, General Land Office, TCEQ Office of Air Quality, Texas Department of Health, and the Texas Railroad Commission).

10. Evidence must be provided that shows coordination with the Local Emergency Planning Committee (LEPC) and any local comprehensive emergency management plan. The applicants should be able to show compliance with SARA Title III.

11. Any medical response capabilities proposed for the facility property must be detailed in the application.

ATTACHMENT III.D
POST·CLOSURE INSPECTION SCHEDULE RECORD FORM
UNION PACIFIC RAILROAD HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS SWR NO. 31547, EPA ID TXD000820266

Inspection Date and Time: _____

Inspector's Name: _____

Inspector's Signature: _____

Facility Units(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection	Status	
			Acceptable	Unacceptable
Security Fencing	Damaged, broken/loose fencepost	Semi-annually & after storm/flood event		
	Loose or broken barbed wire			
	Damaged fence			
	Damaged gate			
	Inoperable gate locks			
Warning Signs	Missing, damaged or illegible signs	Same as above		
Surveyed Benchmarks	Benchmarks missing or damaged	Same as above		
Groundwater Monitor Wells	Well cap condition poor, broken, poor seal	Same as above		
	Lock function sticks, inoperable			
	Casing condition bent, torn, missing			
	Concrete pad cracked, broken, missing			
Final Cover and Cap	Settlement or subsidence	Same as above		
	Damage or erosion to clay cap			
	Erosion/undercutting at cap perimeters			
	Shrubs/trees with long root systems present			
Drainage Structures	Grass requires mowing, treatment or repairs	Same as above		
	Debris or sediment restrict flow			
	Erosion or undercutting			
	Inadequate drainage away from landfill cap			
Comments:				

Note: In accordance with 40 CFR 264.15(b) and (d), copies of the inspetion records will be maintained for at least three years from the date of inspection. Place of sotrage will be PBW, Round Rock, Texas.

PART B PERMIT RENEWAL

SECTION IV – REPLACEMENT PAGES

Table IV.B. - Wastes Managed In Permitted Units

No.	Waste	EPA Hazardous Waste Numbers	TCEQ Waste Form Codes and Classification Codes
001/SWMU 1	Wood treatment (creosote) related wastes*	K001, F034, U051, U188	219, 301, 488, 609

*Historical Wastes Managed, unit was closed in 1984 with releases to groundwater

PART B PERMIT RENEWAL

SECTION V – REPLACEMENT PAGES AND

ADDITIONAL INFORMATION

For inclusion into a permit, complete Table V.C - Tanks and Tank Systems and list the tanks covered by this application to be permitted. List the N.O.R. unit number, whether the unit is for storage and/or processing, the waste managed in each unit, the rated capacity of each unit, overall dimensions of each unit, containment volume, and whether ignitable, reactive, or incompatible waste will be stored in each unit.

If a tank will manage ignitable or reactive waste, as indicated on Table V.C, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.198 and provide drawings demonstrating compliance with any applicable buffer zone requirements and 40 CFR 264.17.

If a tank will manage incompatible waste, as indicated on Table V.C, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.199.

Submit written assessments that were reviewed and certified by an independent, qualified licensed Professional Engineer that attests to the structural integrity and suitability of handling the hazardous waste for each tank system, as required under 40 CFR 264.191-264.192 for existing tanks which do not have secondary containment meeting the standards of 40 CFR 264.193. The engineer signing the written assessment must make the certification specified in 40 CFR 270.11(d). The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.

If a tank has been de-rated or if the permitted capacity is otherwise different from the design capacity, specify in the engineering report.

D. Surface Impoundments

See the attached report for specific information regarding the closed surface impoundment.

Provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(6), 335.168, 335.169, and 40 CFR 264.19, 264.220, 264.221, 264.222, 264.223, 264.226(a) and (c), 264.227, 264.229-264.231, and 270.17.

For storage surface impoundments at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(d). For any surface impoundment to be closed as a landfill (where wastes will remain after closure of the impoundment) at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(e).

For all impoundments, include in the report the following information.

1. Complete Table V.D.1 - Surface Impoundments and list the surface impoundments, covered by this application, to be permitted. List the waste(s) managed in each unit and the rated capacity or size of each unit.

   Table V.D.1 is attached.

2. If a surface impoundment will manage ignitable or reactive waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.229.

   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

3. If a surface impoundment will manage incompatible waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.230.

   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

4. If a surface impoundment will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.D.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.231.

   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

5. Describe the surface impoundment. A plan view and cross-section of the surface impoundment should be included with the engineering report.

   The surface impoundment SWMU No. 1 was not an engineered structure, nor was it designated to serve as a landfill. It was used from 1979 to 1982 for the disposal of contaminated surface soils containing K001 type wastes.

   SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

   The cross-sections prepared by Geo Associates and included in the original 1991 permit application are included in the Figures section as Exhibits 5, 6 and 7 (SPTCo, 1991).

6. Freeboard
   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

   Specify the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error. [40 CFR 264.221(g)] Show that adequate freeboard will be available to prevent overtopping from a 100-year, 24-hour storm.

   If the impoundment is inflow sensitive, it should be equipped with a high-level alarm based on a different level sensor than that used for automatic control.

7. Waste Flow
   Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

10. Surface impoundments that receive waste on or after May 8, 1985 (or for newly-regulated units, the effective date of the new RCRA regulation) into new units and/or lateral expansions or replacements of existing units must meet the minimum technological requirements of the Hazardous and Solid Waste Amendments of 1984, unless an appropriate waiver is granted by the Commission. Plans and specifications for both new and existing surface impoundments must demonstrate conformity with 30 TAC 335.168 and 40 CFR 264.221.

    Not Applicable. The surface impoundment was ~~clean~~ closed in 1984.

11. Run-on Diversion

    Describe in detail how the surface impoundment system will manage stormwater run-on away from the surface impoundment. Stormwater run-on must be diverted away from a surface impoundment. Use at least a 100-year, 24-hour rainfall event in the design and analysis of diversion structures. Where dikes are used to divert run-on, they must be protected from erosion. Include all analyses used to calculate run-on volumes.

    Not Applicable. The wastes stored in the surface impoundment were~~have been~~ removed and the unit ~~was clean~~ closed in 1984. Because no wastes are stored or managed at SWMU No. 1, no stormwater management is necessary at the unit.

12. The Commission may approve an alternate design or operating practice for a surface impoundment if the owner or operator demonstrates that such design or operating practices, together with location characteristics [40 CFR 264.221(d)]:
    a. Will prevent the migration of hazardous constituents into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system required by 40 CFR 264.221; and
    b. Will allow detection leaks of hazardous constituents through the top liner at least as effectively.

    Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

13. Exemption from Double-Liner Requirements for Monofills [264.221(e)]

    Owners or operators of hazardous waste surface impoundment monofills will be exempted from the double-liner requirements if the Commission finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics are at least as effective as a double liner in preventing migration of hazardous constituents to the groundwater or surface water. If an exemption is sought, submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the groundwater or surface water at any future time.

    Not Applicable. The wastes stored in the surface impoundment have been removed and the unit was ~~clean~~ closed in 1984.

E. Waste Piles

Not Applicable. This permit renewal application is for the closed surface impoundment.

This section applies to owners or operators of industrial solid waste facilities that store or process hazardous waste in piles. A hazardous waste pile that will be closed with wastes left in place must be

Table V.D.1. - Surface Impoundments

Permit Unit No.	Surface Impoundment	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions	Distance from lowest liner to groundwater	Action Leakage Rate (if required)	Unit will manage Ignitable, Reactive, Incompatible, or F020, F021, F022, F023, F026, and F027 Waste (state all that apply)
1	Closed Surface Impoundment	001	No waste stored.	Closed (rated capacity before closure was 5065 yd^3)[2]	180 ft x 106 ft x 7ft (before closure)	~~Clean~~ Closed. No waste or liner system in place.	Not Required	No Waste stored. The surface impoundment was ~~clean~~ closed in 1984.

[1]from Table IV.B, first column

[2]Estimated amount of waste and contaminated soil removed in 1984.

Table V.D.6. - Surface Impoundment Liner System
Not Applicable – Unit was closed in 1984 by removal of waste and liner

Surface Impoundment	Primary Liner			Secondary Liner			Clay Liner		
	Material	Permeability (cm/sec)	Thickness	Material	Permeability (cm/sec)	Thickness	Material	Permeability (cm/sec)	Thickness

V. ENGINEERING REPORT

ENGINEERING REPORT FOR THE
PART B PERMIT APPLICATION
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

TABLE OF CONTENTS

Page

LIST OF PART B APPLICATION FORM TABLES ..... V-ii

LIST OF FIGURES ..... V-ii

V.A. GENERAL ENGINEERING REPORTS V-1
V.A.1. General Information V-1
V.A.2. Features to Mitigate Unsuitable Site Characteristics V-1
V.A.3. Construction Schedules V-1

V.D. SURFACE IMPOUNDMENTS V-2
V.D.5. SWMU No. 1 ..... V-2

V.E REFERENCES V-3

LIST OF PART B APPLICATION FORM TABLES

Table

V.D.1. Surface Impoundments

LIST OF FIGURES

Exhibit 5, 6 and 7 were prepared by Geo Associates and submitted to the TCEQ as part of the original Part B Permit in 1991 (SPTCo, 1991). These figures were taken directly from that report. Figures V.A.1 and V.A.2 were prepared by PBW.

Figure

V.A.1 Site Map

V.A.2 Topographic Map

Exhibit 5 Cross Section Location Map

Exhibit 6 Interpreted Geologic Cross Section A-A’

Exhibit 7 Interpreted Geologic Cross Section B-B’

V.A. GENERAL ENGINEERING REPORTS

V.A.1. General Information

Solid Waste Management Unit (SWMU) No. 1 is an inactive surface impoundment and is a grass-covered section of land located at the southwest corner of the facility property (Figure V.A.1). SWMU No. 1 was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of SWMU No. 1 was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

In 1984, Southern Pacific Transportation Company (SPTCo) closed SWMU No. 1 by excavating the soils and materials contained within. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed.

V.A.2. Features to Mitigate Unsuitable Site Characteristics

This section does not apply since the unit is closed.

V.A.3. Construction Schedules

This section does not apply since the unit is closed.

V.D. SURFACE IMPOUNDMENTS

V.D.5. SWMU No. 1

The surface impoundment SWMU No. 1 was not an engineered structure, nor was it designated to serve as a landfill. It was used from 1979 to 1982 for the disposal of contaminated surface soils containing K001 type wastes.

SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

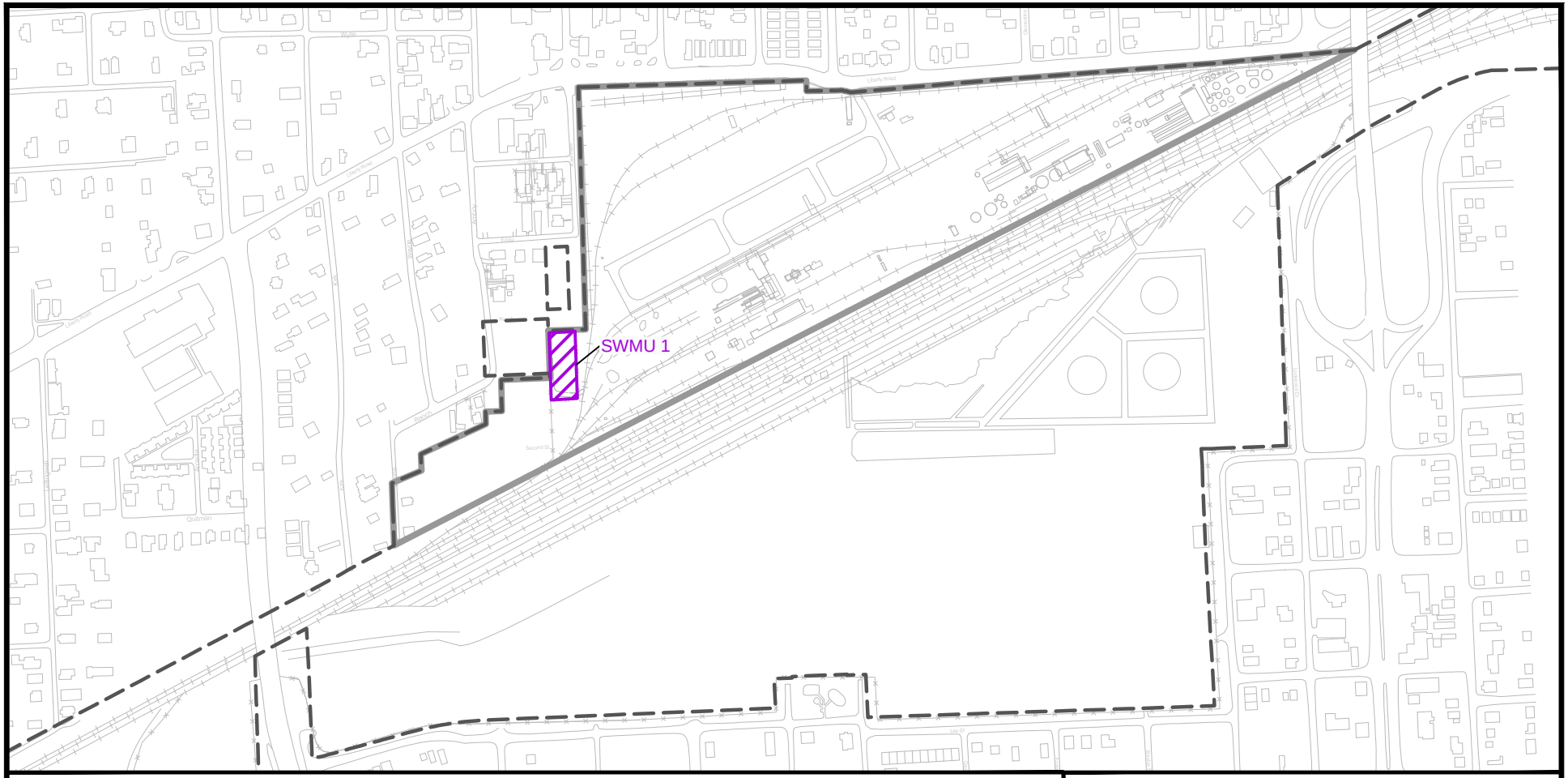
The cross-sections prepared by Geo Associates and included in the original 1991 permit application are included in the Figures section as Exhibits 5, 6 and 7 (SPTCo, 1991).

In 1984 SWMU No. 1 was closed by excavating the soils and materials contained within and groundwater sample results have been compliant with the TCEQ Remedy Standard A requirements for groundwater protection for the past eight years.

V.E REFERENCES

Southern Pacific Transportation Company (SPTCo), 1991. *Part B Permit Application – Post Closure Care and Compliance Plan for the Closed Surface Impoundment.* Volumes I-III. May 13.

FIGURES



EXPLANATION

- UPRR Property Boundary
- UPRR Facility Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad

N

Approx. Scale in Feet

0 250 500

SOURCE:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

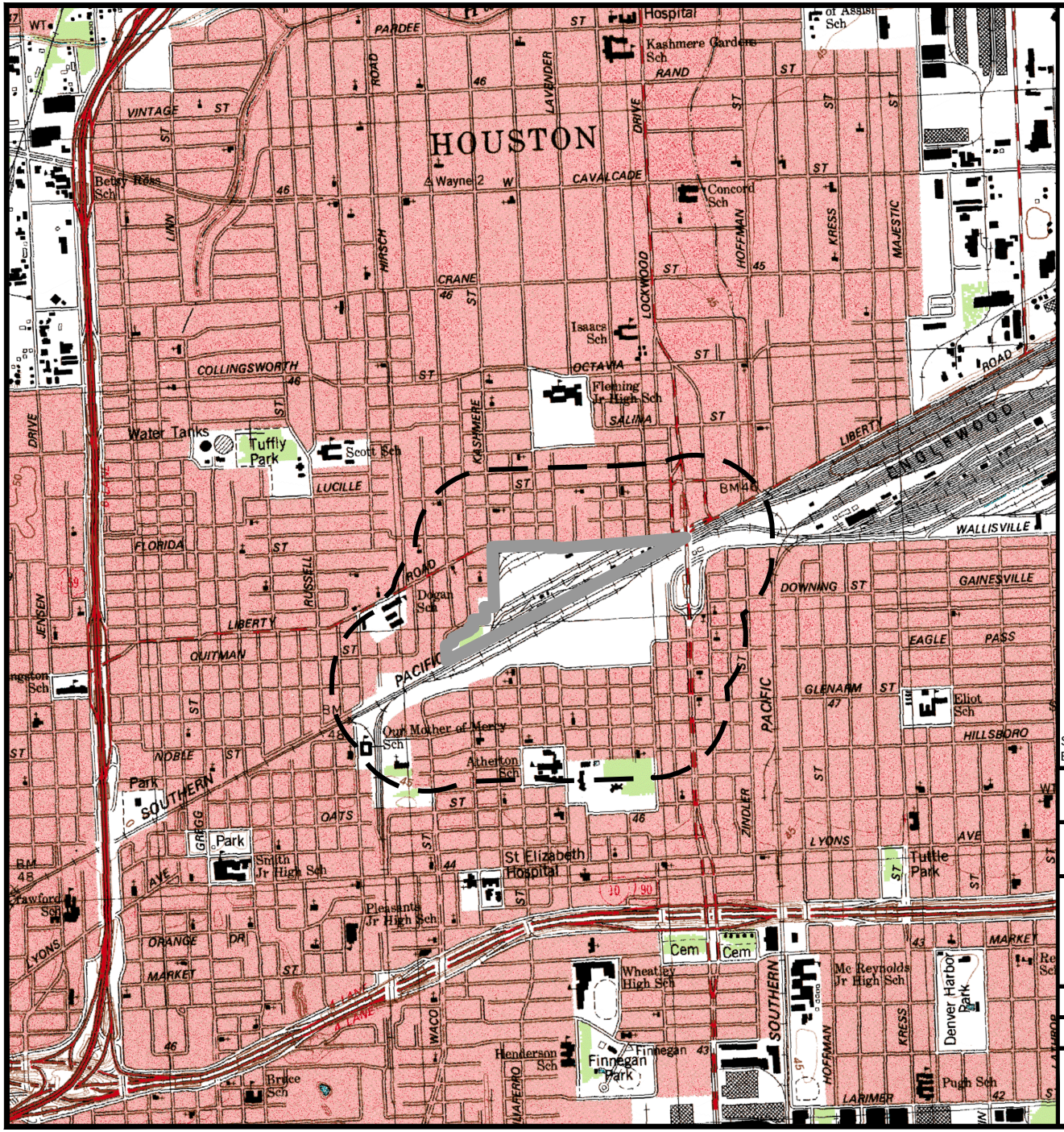
HOUSTON WOOD PRESERVING WORKS

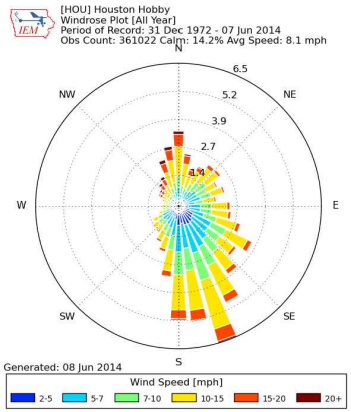
Figure V.A.1

SITE MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS





EXPLANATION

- Site Property Boundary, Fence
- 1000 Ft Radius
- Residential (All other surrounding property land use is industrial)

N

Scale in Feet

0 1000 2000

QUADRANGLE LOCATION

SOURCE: Base map from www.tnris.gov, Settegast, TX 7.5 min. USGS quadrangle dated 1982.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure V.A.2

TOPOGRAPHIC MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

PART B PERMIT RENEWAL

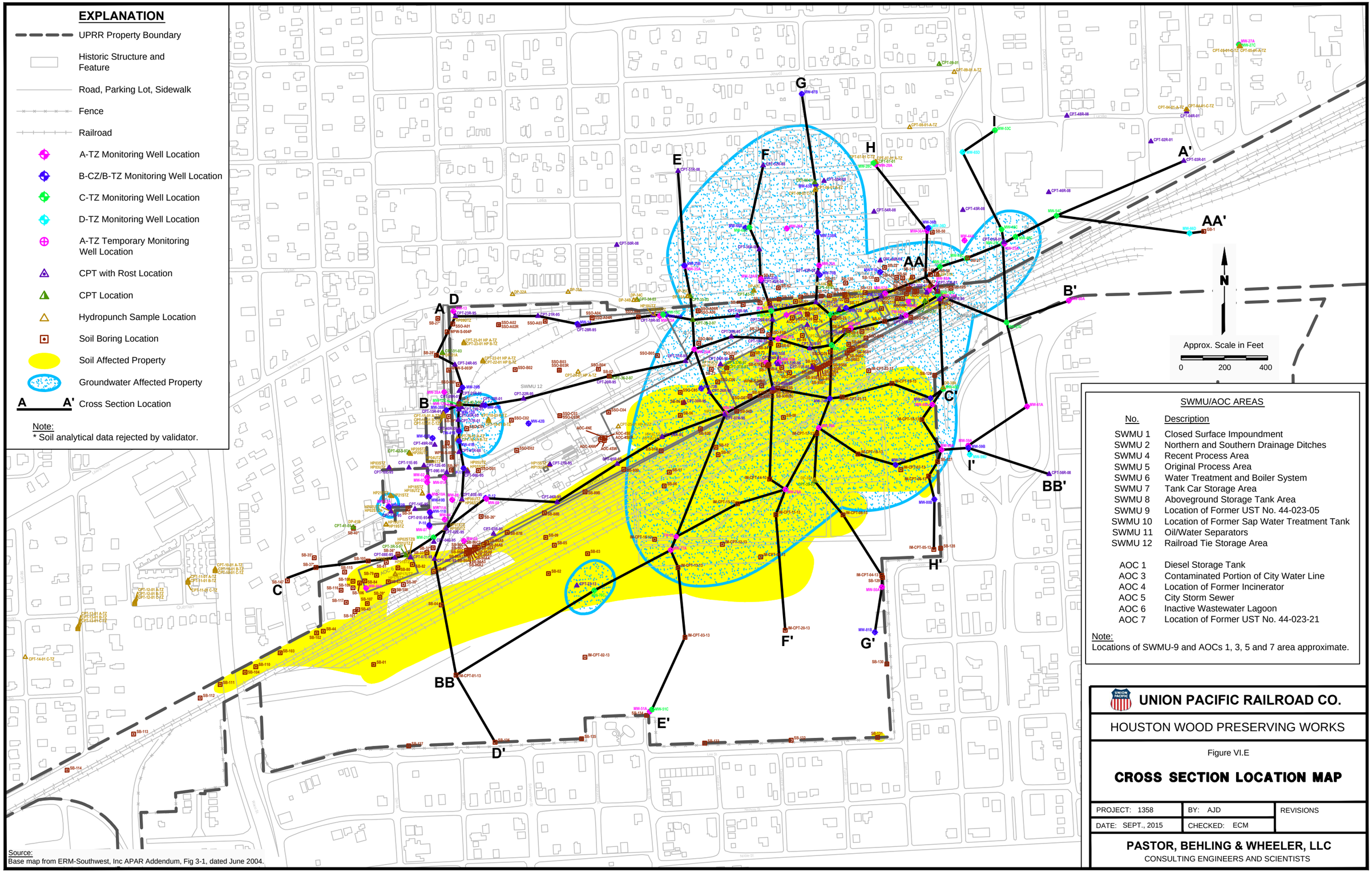
SECTION VI – REPLACEMENT PAGE AND

ADDITIONAL INFORMATION

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-CZ/B-TZ Monitoring Well Location
- C-TZ Monitoring Well Location
- D-TZ Monitoring Well Location
- A-TZ Temporary Monitoring Well Location
- CPT with Rost Location
- CPT Location
- Hydropunch Sample Location
- Soil Boring Location
- Soil Affected Property
- Groundwater Affected Property
- A A' Cross Section Location

Note:
* Soil analytical data rejected by validator.



SWMU/AOC AREAS

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure VI.E

CROSS SECTION LOCATION MAP

PROJECT: 1358	BY: AJD	REVISIONS
DATE: SEPT., 2015	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Table VI.A.4. - WASTE MANAGEMENT AREA SUBSURFACE CONDITIONS
Information taken from Original Part B Application (STPCo, 1991)

Boring Number	Depth Below Grade	Stratum	USC Symbol	Liquid Limit	Plasticity Index	Percent Passing #200 Sieve	Permeability	Percent Porosity
7	4-6	1 – Shallow Sandy Clay	SC	47	34	NA	NA	NA
7	10-12	1 – Shallow Sandy Clay	SC	NA	NA	NA	$1.7x10^{-8}$	NA
9	6-8	1 – Shallow Sandy Clay	SC	54	39	NA	NA	NA
9	10-12	1 – Shallow Sandy Clay	SC	NA	NA	NA	$7.6x10^{-9}$	NA
9	12-14	1 – Shallow Sandy Clay	SC	32	17	NA	NA	NA
P11	2-4	1 – Shallow Sandy Clay	SC	43	30	NA	NA	NA
P11	8-10	1 – Shallow Sandy Clay	SC	NA	NA	54	NA	NA
P13	10-12	1 – Shallow Sandy Clay	SC	41	26	NA	NA	NA
8	12-14	2 – EL +35 ft Sand	SP	NA	NA	42	NA	NA
8	20-22	3 – Intermediate Sandy Clay	SC	NA	NA	79	NA	NA
9	20-22	3 – Intermediate Sandy Clay	SC	NA	NA	NA	$5.3x10^{-8}$	NA
P10	23-25	3 – Intermediate Sandy Clay	SC	42	27	NA	NA	NA
P10	28-30	3 – Intermediate Sandy Clay	SC	NA	NA	NA	$3.9x10^{-7}$	NA
P11	23-25	3 – Intermediate Sandy Clay	SC	NA	NA	83	NA	NA
P11	28-30	3 – Intermediate Sandy Clay	SC	29	12	NA	NA	NA
P12	28-30	3 – Intermediate Sandy Clay	SC	36	20	NA	NA	NA
B13	23-25	3 – Intermediate Sandy Clay	SC	57	37	NA	NA	NA
P10	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P11	33-35	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P11	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P12	33-35	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P12	38-40	4 – EL +15 ft Sand	SP	NA	NA	NA	NA	NA
P10	43-45	5 – Deep Clay	CL	NA	NA	NA	$4.4x10^{-9}$	NA
P11	43-45	5 – Deep Clay	CL	65	42	NA	NA	NA
P12	48-50	5 – Deep Clay	CL	61	38	NA	NA	NA
B13	43-45	5 – Deep Clay	CL	65	41	NA	NA	NA

Maximum depth: 50 feet below grade
-4 feet above MSL

PART B PERMIT RENEWAL

SECTION VII – REPLACEMENT PAGES AND

ADDITIONAL INFORMATION

Table VII.D. - Unit Post-Closure Cost Estimate

Task	Cost
SWMU No. 1	
Groundwater Monitoring	
Groundwater sample collection (10 wells x 20 hrs./sampling event x 2 sampling events/yr)	**$9,400**
Groundwater sample analysis (10 wells x 1 samples/well x 2 events/yr)~~*(Name of permitted unit, e.g.,. East Landfill)*~~	**$3,600**~~$$,$$$~~
~~Verbal description of annual task, e.g.,. leachate collected *(amount generated x disposal cost/unit amount)*~~	~~$$,$$$~~
~~Verbal description of annual task, e.g.,. cap maintenance *(material needed x cost/unit amount)*~~	~~$$,$$$~~
~~Verbal description of annual task, e.g.,. detection monitoring system *(# of wells x # sample events/well/year x lab analysis cost)*~~	~~$$,$$$~~
~~Verbal description of annual task~~	~~$$,$$$~~
~~Other annual tasks~~	~~$$,$$$~~
~~Other annual tasks~~	
Maintenance	
Mowing – Monthly Service ($400/mo)	**$4,800**
subtotal	**$17,800**~~$$$,$$$~~
Contingency (10% minimum)	**$1,780**~~$$,$$$~~
Total Unit Post-Closure Care Cost x 10~~30~~ yrs. ~~(or other post-closure care period)~~	**$195,800 (2015) (10 years)**~~$,$$$,$$$ (20__)~~
SWMU No. 1	
Monitoring Well Plugging and Abandonment	
P&A (10 wells at $750 each) - one time cost~~*(Name of permitted unit, e.g.,. Surface Impoundment West)*~~	**$7,500**~~$$,$$$~~
~~Verbal description of annual task, e.g., leachate collected *(amount generated x disposal cost/unit amount)*~~	~~$$,$$$~~
~~Verbal description of annual task, e.g., cap maintenance *(material needed x cost/unit amount)*~~	~~$$,$$$~~
~~Verbal description of annual task, e.g., detection monitoring system *(# of wells x # sample events/well/year x lab analysis cost)*~~	~~$$,$$$~~
~~Verbal description of annual task~~	~~$$,$$$~~
~~Other annual tasks~~	~~$$,$$$~~
~~Other annual tasks~~	

subtotal	**$7,500**$$$,$$$
Contingency (10% minimum)	**$750**$$,$$$
Total Unit Post-Closure Care Cost (one time cost x 30 yrs. *(or other post-closure care period*)	**$8,250 (2015) (one time cost)**$,$$$,$$$ (20__)

Total Permitted Facility Post-Closure Cost (all unit costs combined)	**$204,050 (2015)**$,$$$,$$$ (20__)

Table VII.E.2. - Permitted Unit Post-Closure Cost Summary

Existing Unit Post-Closure Cost Estimate	
Unit	Cost
SWMU No. 1	**$204,050 (2015)**
Total Existing Unit Post-Closure Cost Estimate	**$204,050 (in 2015~~201x~~ Dollars)[1]**

Proposed Unit Post-Closure Cost Estimate	
Unit	Cost

[1]As units are added or deleted from these tables through future permit amendments or modifications, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

VII. CLOSURE AND POST-CLOSURE CARE PLANS

CLOSURE AND POST-CLOSURE CARE PLANS
PART B PERMIT APPLICATION
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

TABLE OF CONTENTS

Page

LIST OF PART B APPLICATION FORM TABLES ..... VII-ii

VII.C. POST-CLOSURE VII-1
VII.C.1. Post-Closure Care ..... VII-3~~VII-3~~
VII.C.1.a. Inspection Schedule VII-3
VII.C.1.b. Security VII-3
VII.C.1.c. Monitoring Wells VII-3
VII.C.1.d. Corrective Action ..... VII-4~~VII-3~~
VII.C.2. Facility Contact ..... VII-4~~VII-3~~
VII.C.2.a. Facility Records ..... VII-4~~VII-4~~
VII.C.2.b. Amendment of Plan VII-4
VII.C.2.c. Certification of Completion of Post-closure Care VII-4
VII.C.3. Proposed Post-Closure Use of Property ..... VII-5~~VII-4~~
VII.C.4. Closure Under Interim Status ..... VII-5~~VII-4~~

VII.D. POST-CLOSURE COST ESTIMATE ..... VII-6~~VII-5~~

LIST OF PART B APPLICATION FORM TABLES

Table

VII.D.	Unit Post-Closure Cost Estimate
VII.E.2	Permitted Unit Post-Closure Cost Summary
VII.G	Post-Closure Period

LIST OF TABLES

Table

VII.A.1	SWMU No. 1 A-TZ Unit Groundwater Monitoring Data
VII.A.2	SWMU No. 1 B-TZ Unit Groundwater Monitoring Data

LIST OF FIGURES

Figure

VII.A	Site Map
VII.B	2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
VII.C	Dibenzofuran Concentrations vs Time - A-TZ Unit
VII.D	Naphthalene Concentrations vs Time - A-TZ Unit
VII.E	Dibenzofuran Concentrations vs Time - B-TZ Unit
VII.F	Naphthalene Concentrations vs Time - B-TZ Unit

VII.C. POST-CLOSURE

~~VII.C.1.~~Background

This Post-Closure Care Plan was prepared to describe maintenance, monitoring, and response activities for the Houston Wood Preserving Works facility at 4910 Liberty Road, Houston, Texas. Currently, post-closure care includes the semi-annual monitoring of the two uppermost groundwater bearing units, the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ).

Solid Waste Management Unit (SWMU) No. 1 is an inactive surface impoundment and is a grass-covered section of land located at the southwest comer of the facility property (Figure VI.A). SWMU No. 1 was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of SWMU No. 1 was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

SWMU No. 1 is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SWMU No. 1. A chain-link security fence is located along the northern and western margins of SWMU No. 1. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, SWMU No. 1 would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to Southern Pacific Transportation Company (SPTCo) facility representatives, a clay liner was installed during the original construction of SWMU No. 1. No information was available concerning the thickness and engineering properties of the liner.

In 1984, SPTCo clean closed SWMU No. 1 by excavating the soils and materials contained within the unit. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. The area was then divided into 50-foot grids which were randomly selected for sampling. Between 10 and 15 grab samples not more than 6-inches deep were homogenized and analyzed for K001 listed waste parameters and polycyclic aromatic hydrocarbons (PAHs). When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed (Rollins, 1984).

In 1991, a series of six soil borings were drilled within the same six grid areas that were sampled during the 1984 closure operations (Geo Associates, 1991). Four samples were collected from each of the borings

from the following zones: the surficial clay fill, between the clay fill and the uppermost sand, the uppermost sand, and below the uppermost sand unit. These samples were analyzed for benzene, toluene, ethylbenzene and xylene (BTEX), total petroleum hydrocarbons (TPH) and semi-volatiles.

Bis (2-ethylhexyl) phthalate was detected in two samples at concentrations well below the TCEQ Texas Risk Reduction Program (TRRP) Protective Concentration Limits (PCL). Xylene, ethylbenzene and toluene were also detected, but at concentrations well below the PCL. The 1991 soil sampling results indicated that the source of contamination had been removed by the 1984 closure activities (SPTCo, 1991).

In 1984, the facility then began investigating and monitoring the shallow ground water in the vicinity of SWMU No. 1. Between 1984 and 1991, nine groundwater monitoring wells were installed in the upper zone, and three piezometers were installed in the lower permeable zone. Hydrogeological data collected from these wells and piezometers indicate hydraulic conductivity between the zones. Analytical data compiled from 1984 until 1991 indicated that benzene, toluene, naphthalene, 2,4-dimethylphenol, and phenol were the most frequently detected parameters and that naphthalene was the parameter detected at the highest concentrations. Even though the SWMU was clean closed in 1984, a groundwater release was identified and the facility entered into post-closure care in 1994, updated in 2005, and groundwater monitoring has taken place on a semi-annual basis since that time.

With the 2015~~54~~ ~~first~~ semi-annual analytical data, the SWMU No. 1 monitoring wells have been compliant for ~~sixteen~~ 20 consecutive semi-annual monitoring events (10 ~~8~~ years). Tables VII.A.1 and VII.A.2 show groundwater monitoring data for the past 165 years (since 2000) for the A-TZ and B-TX, respectively. Concentration versus time graphs for COCs in the A-TZ (2-methylnaphthalene (Figure VII.B), dibenzofuran (Figure VII.C), and naphthalene (Figure VII.D)) and the B-TZ (dibenzofuran (Figure VII.E) and naphthalene (Figure VII.F)) demonstrate that COC concentrations in the A-TZ and B-TZ POC wells have shown a steady decrease over time. Groundwater at the SWMU No. 1 has achieved TCEQ Remedy Standard A response action objectives and no further action is necessary to protect human health and the environment.

The TCEQ issued a No Further Action in the Technical Notice of Deficiency (NOD) dated August 5, 2015 regarding the corrective action monitoring for SWMU No. 1. Therefore SWMU 1 will be monitored through the compliance monitoring program. A Compliance Monitoring Program has been developed and is included in the revised Section IX.~~It is recommended at this time that all post-closure care activities, including groundwater monitoring of SWMU No. 1, be terminated and the monitoring wells associated with~~

~~the unit be plugged and abandoned. While it is proposed that groundwater monitoring of the regulated unit be terminated, facility wide groundwater monitoring activities will be on-going. These activities are discussed in detail in Section XI – Compliance Plan of this Permit application and the Response Action Plan.~~

VII.C.1. ~~a. Primary Components for~~ Post-Closure~~closure~~ Care

The primary components for post-closure care include the following items:

- Maintain the perimeter security fences, gates~~properly plugging~~ and warning signs;
- Maintain the integrity of ~~abandoning~~ the groundwater monitoring wells; and ~~associated with SWMU No. 1.~~
- Monitor the quality of groundwater.

~~**VII.C.1b. Monitoring Wells**~~

~~**Upon TCEQ approval for NFA for the unit, the monitoring wells associated with SWMU No.**~~

VII.C.1.a. Inspection Schedule ~~will be plugged and abandoned by a licensed driller in accordance with the procedures specified in Texas Department of Licensing and Regulations (TDLR) Section 76.1004. During abandonment activities, an attempt will be made to remove the well casing material from the borehole. The borehole will then be backfilled with a cement/bentonite mixture. Surface completions will be removed and a patch will be placed at the former well location to match surrounding grade.~~

Site inspections will be performed to document site conditions during the pose-closure care period. The inspections are scheduled semi-annually and will coincide with the semi-annual sampling events, with additional inspections to be conducted after major storm events and flood conditions.

VII.C.1.b. Security

Security controls will be evaluated at each inspection. The integrity of the entire perimeter fence for the closed area will be inspected. The base of the fence area will be inspected for erosion which may result in space beneath the fence large enough for passage of animals or people. Hinges and locks on gates will be checked for signs of wear or breakage.

VII.C.1.c. Monitoring Wells

Monitoring wells will be inspected for signs of damage, including well pads, casing, locks and protective covers.

VII.C.1.d. Corrective Action

Corrective action will be taken within 30 days of discovering a problem at the site, facility unit and/or monitoring wells.

VII.C.2. Facility Contact~~Administration~~

The facility contact is:

Mr. Geoffrey B. Reeder, P.G.
Manager, Environmental Site Remediation
Union Pacific Railroad Company
24125 Aldine Westfield Rd.
Spring, TX 77373
Phone: 281-350-7197
Fax: 402-233-2351
gbreeder@up.com

VII.C.2.a. Facility Records

All plans, reports, financial assurance information, correspondence, and related records will be maintained at the following location:

Union Pacific Railroad Company
1400 Douglas St., STOP 1030
Omaha, NE 68179
Phone: 402-544-5000

In accordance with 40 CFR 264.15(b)(2) and (d), copies of all inspection records will be maintained for at least three years from the date of inspection.

VII.C.2.b. Amendment of Plan

In accordance with 40 CFR 264.118(d), a written notification of or a request for a permit modification will be submitted to authorize a change in the post-closure plan. The request will be submitted at least 60 days prior to the proposed change in design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan. A copy of the amended post-closure plan will be included in the notification or request.

VII.C.2.c. Certification of Completion of Post-closure Care

The Site is currently in year 20 (2014) of the 30 years required for post-closure care. ~~However, UPRR is requesting concurrence on a No Further Action for the clean closed unit.~~ In accordance with 40 CFR

264.120, no later than 60 days after completion~~approval~~ of the established post-closure care period~~No Further Action~~ for the ~~clean~~ closed hazardous waste disposal unit, UPRR will submit, by registered mail, a certification that the post-closure care period was performed in accordance with the post-closure care plan. The certification will be signed by UPRR and an independent registered professional engineer.

VII.C.3. Proposed Post-Closure Use of Property

UPRR intends to maintain the Site as an open vegetated area with restricted access. The regulated unit will be part of the on-site Plume Management Zone (PMZ) discussed in detail in Section XI – Compliance Plan Attachment D of this Permit application. Any future use of the site would be contingent upon approval of the TCEQ.

VII.C.4. Closure Under Interim Status

The surface impoundment is not closed under interim status.

VII.D. POST-CLOSURE COST ESTIMATE

A detailed cost estimate for post-closure care is summarized in Table VII.D of the Part B renewal application form included with the post-closure care plan. These costs cover semi-annual sampling and mowing for the ten years left for the post-closure care period. ~~should the requested No Further Action for SWMU No. 1 be denied. The costs associated with the plugging and abandonment of the unit's monitoring wells as outlined in the post-closure care plan are also included in this estimate.~~

TABLES

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-01A	3/27/2000	0.022	0.24	0.005	0.009	0.0007 JB	**0.12**	0.01	0.14	0.13	0.068	0.005
MW-01A	9/25/2000	**0.36**	0.46	0.005	0.024	0.002 J	**0.33**	0.022	0.32	0.068	0.23	0.011
MW-01A	4/27/2001	0.012	0.17	0.004	0.005	0.0005 U	0.091	0.007	0.092	0.24	0.042	0.003
MW-01A	9/28/2001	0.0003 U	0.36	0.005	0.007	0.0005 U	**0.18**	0.01	0.17	0.065	0.1	0.006
MW-01A	3/19/2002	0.033	0.12	0.003	0.004	0.0006 J	0.065	0.006	0.07	0.11	0.028	0.003
MW-01A	9/25/2002	0.002	0.26	0.002	0.008	0.0004 U	**0.17**	0.01	0.17	0.005	0.033	0.005
MW-01A	3/17/2004	0.005221	0.04226	0.000785	0.001854	0.000973	0.0194	0.003337	0.02334	0.000919	0.002194	0.00117
MW-01A	3/4/2005	0.0882	0.224	0.00326	0.00754	0.00035 U	**0.101**	0.00935	0.124	0.12	0.0182	0.00362
MW-01A	7/19/2005	**0.1036**	0.245	0.00221	0.0101	0.000356 U	**0.11**	0.0139	0.137	0.0216	0.0233	0.00593
MW-01A	9/8/2005						**0.133**					
MW-01A	1/6/2006	0.00169	0.0937	0.00387	0.0021	0.000356 U	0.0143	0.00557	0.0221	0.000519	0.00065	0.0025
MW-01A	7/28/2006	0.0205	0.163	0.00182	0.00613	0.00009 U	0.0639	0.0079	0.0792	0.00292	0.00698	0.00376
MW-01A	1/23/2007	0.000262	0.0509	0.00137	0.00226	0.00009 U	0.00839	0.00251	0.0155	0.000302	0.000229	0.00105
MW-01A	7/18/2007	0.00133 U	0.11	0.00114 U	0.000952 U	0.00352 U	0.00849 J	0.00696 J	0.0514	0.00124 U	0.00336 J	0.00304 J
MW-01A	1/28/2008	0.00044 U	0.0415	0.00099	0.00129	0.00022 U	0.00129	0.00234	0.0162	0.00044 U	0.00022 U	0.00107
MW-01A	7/16/2008	0.0109	0.126	0.00143	0.00267	0.00137 J	0.00774	0.00923	0.0659	0.0168	0.00177	0.00417
MW-01A	1/22/2009	0.0069	0.054	0.0007 U	0.0012 J	0.0012 U	0.0058	0.0024 J	0.028	0.0008 U	0.001 J	0.001 J
MW-01A	7/22/2009	0.0017 J	0.085	0.0005 U	0.0011 J	0.0033 U	0.0037 J	0.0037 J	0.04	0.0029 J	0.0005 U	0.0019 J
MW-01A	1/22/2010	0.0019 J	0.04	0.0005 U	0.0006 U	0.0033 U	0.0016 J	0.0017 J	0.022	0.0043 J	0.0005 U	0.0005 U
MW-01A	7/14/2010	0.0009 U	0.068	0.0005 U	0.0017 J	0.0033 U	0.0044 J	0.004 J	0.04	0.0006 U	0.0011 J	0.0021 J
MW-01A	1/11/2011	0.0009 U	0.07	0.0011 J	0.0021 J	0.0033 U	0.0007 U	0.0025 J	0.039	0.0006 U	0.0005 U	0.0011 J
MW-01A	7/13/2011	0.0068	0.1	0.0011 J	0.0029 J	0.003 J	0.0054	0.0062	0.056	0.0005 U	0.002 J	0.0028 J
MW-01A	1/31/2012	0.0005 U	0.029	0.0005 U	0.0005 U	0.0005 U	0.0045 J	0.0012 J	0.0013 J	0.0005 U	0.0005 U	0.0005 U
MW-01A	7/11/2012	0.012	0.084	0.0017 J	0.003 J	0.0005 U	0.025	0.0047 J	0.041	0.0005 U	0.0033 J	0.0021 J
MW-01A	1/9/2013	0.00125	0.117	0.00222	0.000285 J	0.00163	0.0141	0.00602	0.0564	0.00219	0.00388	0.00261
MW-01A	7/11/2013	0.00193	0.098	0.00122	0.0022	0.000356 U	0.00264	0.00399	0.0323	0.0169	0.00109	0.00165
MW-01A	1/8/2014	0.00222	0.0895	0.00093	0.003	0.000838 J	0.00951	0.00257	0.0369	7.41E-05 U	0.00175	0.0013
MW-01A	7/2/2014	0.00865	0.0848	0.00138	0.00326	0.000349 U	0.0132	0.0043	0.0369	0.074	0.00537	0.00204
MW-01A	1/15/2015	0.00007 U	0.0594	0.00104	0.00139	0.00533	0.000541	0.00246	0.0209	0.000121 J	0.000335 J	0.00105
MW-01A	7/8/2015	0.00063	0.086	0.0009	0.0018	0.0002	0.0032	0.0034	0.038	0.00083	0.0012	0.0015

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-02	3/27/2000	0.0004 J	0.022	0.0006 J	0.002	0.0006 JB	0.017	0.002 J	0.016	0.011	0.001 J	0.0007 J
MW-02	9/25/2000	0.005	0.033	0.001 J	0.002	0.0005 U	0.033	0.003	0.031	0.24	0.002	0.001 J
MW-02	4/26/2001	0.0009 J	0.01	0.0003 J	0.002 J	0.0005 U	0.008	0.003	0.009	0.028	0.002	0.002 J
MW-02	9/28/2001	0.001 J	0.012	0.0005 J	0.002 J	0.0005 U	0.01	0.002 J	0.01	0.034	0.003	0.001 J
MW-02	3/13/2002	0.0006 J	0.015	0.0004 J	0.001 J	0.0005 U	0.012	0.001 J	0.013	0.006	0.001 J	0.0007 J
MW-02	9/24/2002	0.0004 J	0.02	0.0004 J	0.001 J	0.0004 U	0.014	0.001 J	0.014	0.013	0.001 J	0.0007 J
MW-02	3/17/2004	0.001694	0.03018	0.000418 J	0.001494	0.000172 U	0.01945	0.001861	0.02035	0.000604	0.002468	0.00088
MW-02	3/4/2005	0.00008 J	0.0394	0.0004 J	0.00114	0.00035 U	0.0152	0.00421	0.0268	0.00161	0.00024 J	0.00183
MW-02	7/19/2005	0.00007 U	0.0031	0.00006 U	0.00032 J	0.000352 U	0.00245	0.000796	0.00268	0.00006 U	0.00036 J	0.00042 J
MW-02	1/5/2006	0.00046 J	0.0142	0.00128	0.000857	0.00037 U	0.0152	0.00113	0.0148	0.0053	0.00024 J	0.00041 J
MW-02	7/28/2006	0.000622	0.0098	0.0002	0.000783	0.00018 J	0.00767	0.00123	0.00604	0.0106	0.00103	0.00063
MW-02	1/23/2007	0.00008 U	0.00675	0.00015 J	0.000542	0.00009 U	0.00488	0.000625	0.00479	0.000406	0.00005 J	0.0003
MW-02	7/18/2007	0.0024 J	0.0256	0.00114 U	0.00138 J	0.00352 U	0.0174	0.00165 J	0.0157	0.0188	0.00167 J	0.00095 U
MW-02	1/28/2008	0.00038 U	0.017	0.00028 U	0.000922	0.00049 J	0.0106	0.0015	0.0119	0.000827	0.000532	0.00082
MW-02	7/16/2008	0.00039 U	0.0218	0.0003 J	0.00042 J	0.00019 U	0.00673	0.000961	0.0103	0.00118	0.00019 U	0.00045 J
MW-02	1/22/2009	0.0008 U	0.014	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0039 J	0.0008 U	0.0007 U	0.0009 U
MW-02	7/22/2009	0.0025 J	0.032	0.0005 U	0.0006 U	0.0033 U	0.0042 J	0.0011 J	0.015	0.012	0.0005 U	0.0005 U
MW-02	1/22/2010	0.0009 U	0.0073	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0037 J	0.0006 U	0.0005 U	0.0005 U
MW-02	7/14/2010	0.0009 U	0.018	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.011	0.0006 U	0.0005 U	0.0005 U
MW-02	1/11/2011	0.0009 U	0.0078	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0049 J	0.0006 U	0.0005 U	0.0005 U
MW-02	7/13/2011	0.0021 J	0.026	0.0005 U	0.0005 U	0.0021 J	0.0038 J	0.0012 J	0.015	0.0037 J	0.0005 U	0.0005 U
MW-02	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-02	7/10/2012	0.0005 U	0.0088	0.0005 U	0.0005 U	0.0005 U	0.0043 J	0.0005 U	0.0043 J	0.0033 J	0.0005 U	0.0005 U
MW-02	1/9/2013	0.00318	0.0384	0.00057	0.00129	0.000874	0.0178	0.00147	0.0201	0.0211	0.00241	0.00087
MW-02	7/11/2013	0.000897	0.0179	0.000335 J	0.0013	0.000356 U	0.00734	0.00069	0.00986	0.00754	0.000776	0.00034 J
MW-02	1/8/2014	6.48E-05 U	0.000445 J	0.000101 J	0.00131	0.000343 U	0.000147 J	0.000307 J	0.00026 J	7.41E-05 U	0.000122 J	0.00018 J
MW-02	7/2/2014	0.000509	0.00452	0.0000979 J	0.000596	0.000349 U	0.00301	0.000368 J	0.00357	0.00653	0.000594	0.0002 J
MW-02	1/15/2015	0.000105 J	0.0026	0.0000892 J	0.000153 J	0.000426 J	0.000377 J	0.00007 U	0.00068	0.000472 J	0.000162 J	0.00011 U
MW-02	7/8/2015	0.00013	0.001	0.000015	0.000078	0.00013	0.00075	0.00001	0.00067	0.0013	0.00011	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-07	3/29/2000	0.0004 U	0.0002 J	0.0009 U	0.0006 J	0.0007 JB	0.0006 U	0.0004 U	0.0005 U	0.0001 J	0.00007 J	0.0003 U
MW-07	9/26/2000	0.0003 U	0.017	0.0002 J	0.0005 J	0.001 J	0.001 J	0.0008 J	0.0004 J	0.0003 J	0.0003 U	0.001 J
MW-07	4/25/2001	0.0003 U	0.0003 U	0.0002 U	0.001 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-07	9/27/2001	0.0003 U	0.006	0.0002 U	0.002 J	0.0006 J	0.0003 U	0.001 J	0.0003 U	0.0003 U	0.0004 J	0.0009 J
MW-07	3/11/2002	0.0003 U	0.0005 J	0.0002 U	0.0008 J	0.001 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-07	9/25/2002	0.00007 U	0.0009 J	0.00006 U	0.0007 J	0.0004 U	0.00008 J	0.0004 J	0.0001 J	0.0005 J	0.00009 U	0.0006 J
MW-07	3/16/2004	0.000067 U	0.000285 J	0.000076 U	0.000219 J	0.000172 U	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-07	3/1/2005	0.00007 U	0.0001 J	0.00006 U	0.0004 J	0.000791	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-07	7/19/2005	0.00007 U	0.0015	0.00006 U	0.000653	0.000352 U	0.00015 J	0.00017 J	0.00007 U	0.00006 U	0.00009 U	0.00026 J
MW-07	1/5/2006	0.00007 U	0.00286	0.00008 J	0.000537	0.000422 J	0.00009 J	0.00008 U	0.00038 J	0.00019 J	0.00009 U	0.00009 U
MW-07	7/28/2006	0.00008 U	0.00362	0.00008 U	0.000417	0.00009 U	0.00006 U	0.000275	0.00018 J	0.00007 U	0.00004 U	0.00053
MW-07	1/23/2007	0.00008 U	0.00004 U	0.00008 U	0.000353	0.00009 U	0.00006 U	0.00004 U	0.00004 U	0.000637	0.00004 U	0.00004 U
MW-07	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-07	1/28/2008	0.00038 U	0.00028 U	0.00028 U	0.000516	0.00019 U	0.00028 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00019 U
MW-07	7/16/2008	0.00039 U	0.00029 U	0.00044 J	0.000982	0.00019 U	0.00029 U	0.00019 U	0.00019 U	0.000675	0.00036 J	0.00019 U
MW-07	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-07	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	1/22/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	7/14/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0049 J	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	1/12/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-07	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-07	1/10/2013	0.000066 U	0.00181	0.00011 J	0.000833	0.000349 U	0.0000755 U	0.000066 U	0.00014 J	7.55E-05 U	0.0000566 U	0.0001 U
MW-07	7/11/2013	7.04E-05 U	0.0000804 U	0.0000603 U	0.000749	0.000372 U	0.0000804 U	0.0000704 U	7E-05 U	0.000111 J	0.0000603 U	0.00011 U
MW-07	1/9/2014	6.48E-05 U	0.0000741 U	0.0000556 U	4.63E-05 U	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-07	7/3/2014	0.000066 U	0.0000755 U	0.0000566 U	0.000696	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-07	1/15/2015	0.00007 U	0.00008	0.00006 U	0.000271 J	0.000944	0.00008 U	0.000189 J	7.9E-05 J	0.00008 U	0.00006 U	0.00014 J
MW-07	7/8/2015	0.000019	0.000027	0.000015	0.00014	0.00024	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-08	3/27/2000	0.0004 U	0.0007 U	0.0009 U	0.0003 J	0.0006 JB	0.0006 U	0.00005 J	0.0005 U	0.0002 J	0.0001 J	0.00004 J
MW-08	9/25/2000	0.0003 U	0.0003 U	0.0002 U	0.0004 U	0.001 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 J
MW-08	4/25/2001	0.0003 U	0.002	0.0002 U	0.0006 J	0.0005 U	0.001 J	0.0004 U	0.001 J	0.013	0.0003 U	0.0003 U
MW-08	9/27/2001	0.0003 U	0.0003 U	0.0002 U	0.0008 J	0.0007 J	0.0003 U	0.0005 J	0.0003 U	0.0003 U	0.0003 U	0.0004 J
MW-08	3/12/2002	0.0002 U	0.0003 J	0.0002 U	0.0005 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-08	9/25/2002	0.00007 U	0.00007 U	0.00006 U	0.0002 J	0.0004 U	0.00007 U	0.00009 U	0.00007 U	0.0001 U	0.00009 U	0.0002 J
MW-08	3/16/2004	0.000067 U	0.000074 U	0.000076 U	0.000124 U	0.000172 U	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-08	3/1/2005	0.00007 U	0.00012 J	0.00006 U	0.00015 J	0.00035 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-08	7/18/2005	0.00007 U	0.00007 U	0.00006 U	0.00026 J	0.000356 J	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00012 J
MW-08	1/6/2006	0.00007 U	0.00007 U	0.00006 U	0.00011 J	0.000363 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-08	7/28/2006	0.00008 U	0.00004 U	0.00008 U	0.00018 J	0.00012 J	0.00006 U	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-08	1/22/2007	0.00008 U	0.00004 U	0.00008 U	0.00004 U	0.00009 U	0.00006 U	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-08	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.00135 J	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-08	1/29/2008	0.00044 U	0.00033 U	0.00033 U	0.00031 J	0.00022 U	0.00033 U	0.00022 U	0.00022 U	0.00044 U	0.00022 U	0.00022 U
MW-08	7/16/2008	0.0004 U	0.0003 U	0.00044 J	0.000669	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.000654	0.00036 J	0.0002 U
MW-08	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-08	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	1/22/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	7/14/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	1/12/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-08	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-08	1/10/2013	0.000066 U	0.0000755 U	0.0000566 U	0.000439 J	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-08	7/11/2013	6.86E-05 U	0.0000784 U	0.0000588 U	0.000101 J	0.000363 U	0.0000784 U	0.0000686 U	6.9E-05 U	7.84E-05 U	0.0000588 U	0.00011 U
MW-08	1/9/2014	6.48E-05 U	0.0000741 U	0.0000556 U	0.000494	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000637 J	0.0001 U
MW-08	7/3/2014	0.000066 U	0.0000755 U	0.0000566 U	4.72E-05 U	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-08	1/15/2015	0.00007 U	0.00008	0.00006 U	0.000056 J	0.00037 U	0.00008 U	0.00007 U	0.00007 U	0.00008 U	0.00006 U	0.00011 U
MW-08	7/8/2015	0.000019	0.000027	0.000015	0.000014	0.00013	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-10A	3/28/2000	0.0002 J	0.0869	0 U	0.003	0.0006 JB	0.0019	0.008	0.0353	0.0929	0.0025	0.0053
MW-10A	9/25/2000	0.0003 U	0.004	0.0002 U	0.0004 J	0.001 J	0.0006 J	0.0004 U	0.0006 J	0.0005 J	0.0004 J	0.0003 J
MW-10A	4/27/2001	0.0003 U	0.003	0.0002 U	0.0006 J	0.0007 J	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-10A	9/28/2001	0.0003 U	0.0006 J	0.0002 U	0.0005 J	0.0005 U	0.0004 J	0.0004 U	0.0004 J	0.0003 U	0.0003 J	0.0003 U
MW-10A	3/12/2002	0.0003 U	0.001 J	0.0002 U	0.0005 J	0.0005 U	0.0003 U	0.0004 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
MW-10A	9/24/2002	0.00007 U	0.00007 U	0.00006 U	0.00009 U	0.0004 U	0.00007 U	0.00009 U	0.00007 U	0.0001 U	0.00009 U	0.00009 U
MW-10A	3/16/2004	0.000067 U	0.000074 U	0.000076 U	0.000124 U	0.000916	0.000076 U	0.000093 U	6.8E-05 U	0.000067 U	0.000077 U	8.4E-05 U
MW-10A	3/1/2005	0.00007 U	0.00007 U	0.00006 U	0.00013 J	0.00035 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	7/19/2005	0.00007 U	0.00011 J	0.00006 U	0.00007 U	0.000352 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	1/5/2006	0.00007 U	0.00007 U	0.00006 U	0.00011 J	0.000359 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.00009 U	0.00009 U
MW-10A	7/28/2006	0.00008 U	0.000327	0.00008 U	0.00004 U	0.00009 U	0.00017 J	0.00004 U	0.00004 U	0.00007 U	0.00004 U	0.00004 U
MW-10A	1/23/2007	0.00008 U	0.000714	0.00008 U	0.000273	0.00009 U	0.00009 J	0.00004 U	0.00015 J	0.00007 U	0.00004 U	0.00004 U
MW-10A	7/17/2007	0.00133 U	0.00114 U	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.000952 U	0.00095 U	0.00124 U	0.000952 U	0.00095 U
MW-10A	1/28/2008	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.0004 U	0.0002 U	0.0002 U
MW-10A	7/16/2008	0.00038 U	0.00029 U	0.00029 U	0.00019 U	0.0002 J	0.00029 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00019 U
MW-10A	1/22/2009	0.0008 U	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-10A	7/22/2009	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	1/21/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	7/13/2010	0.0018 J	0.0018 J	0.001 J	0.0012 J	0.0033 U	0.0014 J	0.001 J	0.0012 J	0.0012 J	0.001 J	0.001 J
MW-10A	1/11/2011	0.0009 U	0.0017 J	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-10A	7/13/2011	0.0005 U	0.0545 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	7/10/2012	0.0005 U	0.0016 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-10A	1/9/2013	6.67E-05 U	0.0000762 U	0.0000571 U	0.000468 J	0.00171	0.0000762 U	0.0000667 U	6.7E-05 U	7.62E-05 U	0.0000571 U	0.00011 U
MW-10A	7/11/2013	0.00178	0.0306	0.000385 J	0.00036 J	0.000356 U	0.00866	0.000186 J	0.00631	0.199	0.00221	0.00011 U
MW-10A	1/8/2014	6.48E-05 U	0.0000741 U	0.0000556 U	4.63E-05 U	0.000343 U	0.0000741 U	0.0000648 U	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-10A	7/15/2014	0.00262 J	0.0306	0.000566 U	0.000472 U	0.00349 U	0.00862	0.00066 U	0.0111	0.199	0.00442 J	0.00104 U
MW-10A	1/15/2015	0.00007 U	0.00272	0.000126 J	0.000191 J	0.00037 U	0.000349 J	0.00007 U	0.00069	0.000322 J	0.000126 J	0.00011 U
MW-10A	7/8/2015	0.000019	0.000027	0.000015	0.000069	0.000088	0.00002	0.00001	0.00003	0.00002	0.000021	1.9E-05

TABLE VII.A.1
SWMU NO. 1 A-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
	PCL (mg/L)	0.098	1.5	1.5	7.3	0.006	0.098	0.98	0.98	0.49	0.73	0.73
MW-11A	3/28/2000	0.0021	0.232	0.00383	0.011	0.001 JB	**0.103**	0.016	0.179	0.0637	0.0694	0.0067
MW-11A	9/22/2000	0.001 J	0.31	0.003	0.01	0.0005 U	**0.12**	0.015	0.2	0.01	0.084	0.007
MW-11A	4/26/2001	0.014	0.28	0.004	0.014	0.0005 U	**0.14**	0.015	0.16	0.47	0.074	0.006
MW-11A	9/27/2001	**0.14**	0.31	0.004	0.008	0.0008 J	**0.13**	0.012	0.18	**2.4**	0.075	0.008
MW-11A	3/11/2002	0.027	0.4	0.005	0.013	0.0005 U	**0.19**	0.015	0.23	**0.68**	0.11	0.007
MW-11A	9/23/2002	0.073	0.27	0.003	0.009	0.0004 U	**0.099**	0.012	0.15	0.49	0.07	0.007
MW-11A	3/16/2004	0.00007 U	0.002777	0.00008 U	0.000321 J	0.001042	0.000463 J	0.000394 J	0.00035 J	0.002776	0.000081 U	8.8E-05 U
MW-11A	3/3/2005	0.00016 J	0.0139	0.00006 U	0.000833	0.000806	0.00451	0.000786	0.00663	0.011	0.00023 J	0.00016 J
MW-11A	7/19/2005	0.00019 J	0.0732	0.00074	0.00201	0.000352 U	0.00957	0.0064	0.0229	0.00482	0.00196	0.00308
MW-11A	1/5/2006	0.00007 U	0.00007 U	0.00006 U	0.00007 U	0.000363 U	0.00008 U	0.000516	0.00008 J	0.00006 U	0.00009 U	0.00011 J
MW-11A	7/28/2006	0.00008 U	0.0306	0.000263	0.000543	0.00014 J	0.000566	0.00362	0.00066	0.00012 J	0.00018 J	0.00186
MW-11A	1/23/2007	0.00008 U	0.00685	0.00008 U	0.000287	0.00009 U	0.0019	0.000292	0.00326	0.00481	0.000829	0.00016 J
MW-11A	7/17/2007	0.00133 U	0.0404	0.00114 U	0.000952 U	0.00352 U	0.0041 U	0.00297 J	0.00095 U	0.00124 U	0.0011 J	0.00148 J
MW-11A	1/28/2008	0.00038 U	0.0346	0.00029 U	0.000798	0.00028 J	0.00276	0.00338	0.0069	0.00038 U	0.00036 J	0.00191
MW-11A	7/16/2008	0.0004 U	0.02	0.0003 U	0.00054	0.0002 U	0.0003 U	0.00387	0.00089	0.0004 U	0.0002 U	0.00184
MW-11A	1/22/2009	0.0008 U	0.0076	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0012 J	0.0008 U	0.0008 U	0.0007 U	0.0009 U
MW-11A	7/22/2009	0.0009 U	0.014	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0011 J	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	1/21/2010	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	7/13/2010	0.0018 J	0.0056 UJ	0.001 J	0.0012 J	0.0033 U	0.0014 J	0.001 J	0.0012 J	0.0012 J	0.001 J	0.001 J
MW-11A	1/11/2011	0.0009 U	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
MW-11A	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	1/30/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	7/10/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11A	1/9/2013	0.000066 U	0.00175	0.0000566 U	0.000499	0.000349 U	0.0000755 U	0.000066 U	6.6E-05 U	7.55E-05 U	0.0000566 U	0.0001 U
MW-11A	7/11/2013	6.73E-05 U	0.000878	0.0000577 U	0.00044 J	0.000356 U	0.0000769 U	0.000221 J	6.7E-05 U	7.69E-05 U	0.0000577 U	0.00012 J
MW-11A	1/8/2014	6.48E-05 U	0.0000741 U	0.0001 J	0.00125	0.00046 J	0.0000741 U	0.0000795 J	6.5E-05 U	7.41E-05 U	0.0000556 U	0.0001 U
MW-11A	7/2/2014	0.000066 U	0.00427	0.000185 J	0.00126	0.00516	0.000618	0.00215	0.00149	0.000343 J	0.000384 J	0.00194
MW-11A	1/15/2015	0.00007 U	0.000471	0.00006 U	0.000399 J	0.00037 U	0.00008 U	0.00007 U	0.00007 U	0.00008 U	0.00006 U	0.00011 U
MW-11A	7/8/2015	0.000019	0.00025	0.000015	0.00017	0.00068	0.00012	0.00028	0.00011	0.00002	0.000021	0.00023

Notes:
PCL = Protective Concentration Level
J = Estimated value between the SDL and the MQL
U = Value not detected greater than the MQL
Bolded concentrations exceed PCL.

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
MW-10B	3/28/2000	0.0072	0.0003 J	0.002 J	0.0007 JB	0.0149	0.0006 JB	0.001 J	0.0142	0.0231	0.0002 J	0.0005 J
MW-10B	9/25/2000	0.32	0.004	0.014	0.0005 U	**0.2**	0.0009 J	0.01	0.19	**1.2**	0.0003 J	0.005
MW-10B	4/26/2001	0.087	0.002	0.004	0.0005 U	0.036	0.0004 U	0.003	0.047	0.18	0.002	0.001 J
MW-10B	9/28/2001	0.072	0.001 J	0.002	0.0005 U	0.029	0.0004 U	0.002 J	0.036	0.001 J	0.0002 U	0.001 J
MW-10B	3/13/2002	0.073	0.001 J	0.004	0.0006 J	0.032	0.0004 U	0.003	0.044	0.075	0.0002 U	0.002 J
MW-10B	9/24/2002	0.15	0.002	0.006	0.0004 J	0.076	0.001 J	0.005	0.086	0.33	0.00006 U	0.003
MW-10B	3/16/2004	0.04421	0.000833	0.002478	0.000982	0.0171	0.0003 J	0.001567	0.02079	0.001853	9.53E-05 U	0.000718
MW-10B	3/1/2005	0.0164	0.00035 J	0.000995	0.00035 U	0.00482	0.00022 J	0.000941	0.00601	0.00171	0.00004 U	0.00041 J
MW-10B	7/19/2005	0.0739	0.000953	0.00413	0.000352 U	0.0286	0.00065	0.00288	0.0377	0.0789	0.00004 U	0.00125
MW-10B	1/5/2006	0.0113	0.000711	0.000556	0.000356 U	0.0002 J	0.00011 U	0.000649	0.00007 U	0.00006 U	0.00004 U	0.00038 J
MW-10B	7/28/2006	0.0802	0.00107	0.00491	0.00022	0.0323	0.0002	0.00273	0.0434	0.0904	0.00007 U	0.00128
MW-10B	1/23/2007	0.0279	0.00103	0.00126	0.00016 J	0.00312	0.0001 U	0.000745	0.00344	0.000242	0.00007 U	0.000283
MW-10B	7/17/2007	0.0961	0.00114 U	0.00437 J	0.0019 U	0.0325	0.00362 U	0.0028 J	0.0399	0.0252	0.00267 U	0.000952 U
MW-10B	1/28/2008	0.0743	0.00122	0.00432	0.00019 U	0.0255	0.00019 U	0.00371	0.0374	0.0185	0.00019 U	0.00146
MW-10B	7/16/2008	0.0975	0.00113	0.00484	0.0002 J	0.0392	0.0002 U	0.00397	0.0457	0.014	0.0002 U	0.00174
MW-10B	1/22/2009	0.096	0.0007 U	0.0043 J	0.0012 U	0.035	0.0007 U	0.0039 J	0.051	0.0028 J	0.0015 U	0.002 J
MW-10B	7/22/2009	0.067	0.0005 U	0.0029 J	0.0033 U	0.023	0.0005 U	0.0022 J	0.033	0.0082	0.0005 U	0.0013 J
MW-10B	1/21/2010	0.052	0.0005 U	0.0025 J	0.0033 U	0.018	0.0005 U	0.0017 J	0.031	0.0037 J	0.0005 U	0.0005 U
MW-10B	7/13/2010	0.138	0.001 J	0.0076 UJ	0.0033 U	0.05	0.001 J	0.0052 UJ	0.082	0.112	0.001 J	0.002 UJ
MW-10B	1/11/2011	0.096	0.0005 U	0.0068	0.0033 U	0.037	0.0005 U	0.0054	0.059	0.075	0.0005 U	0.0023 J
MW-10B	7/13/2011		0.0005 U	0.0033 J	0.0013 J	0.019	0.0005 U	0.0023 J	0.032	0.0018 J	0.0005 U	0.0011 J
MW-10B	1/30/2012	0.1	0.0011 J	0.0057	0.0005 U	0.038	0.0005 U	0.0046 J	0.06	0.084	0.0005 U	0.002 J
MW-10B	7/10/2012	0.054	0.0005 U	0.0032 J	0.0005 U	0.02	0.0005 U	0.0028 J	0.031	0.004 J	0.0005 U	0.0011 J
MW-10B	1/9/2013	0.12	0.00108	0.00546	0.000349 U	0.0401	0.0001 U	0.00427	0.0652	0.00399	3.77E-05 U	0.00146
MW-10B	7/11/2013	0.977	0.00986	0.0391	0.0037 U	**0.302**	0.011 U	0.0274	0.468	0.207	0.0004 U	0.0101
MW-10B	1/8/2014	0.021	0.000536	0.00107	0.000408 J	0.00493	0.00028 J	0.000117 J	0.00429	0.0646	0.000037 U	0.000102 U
MW-10B	7/15/2014	0.0777	0.000566 U	0.00352 J	0.00349 U	0.0258	0.00104 U	0.00211 J	0.0424	0.125	0.000377 U	0.00104 U
MW-10B	1/15/2015	0.166	0.00104	0.00702	0.00037 U	0.0727	0.00011 J	0.00711	0.0975	**0.556**	0.00004 U	0.00234
MW-10B	1/29/2015	0.0507	0.000597	0.00179	0.000366 U	0.0129	0.00011 U	0.00117	0.0202	0.0247	0.00004 U	0.000392
MW-10B	7/8/2015	0.084	0.00048	0.003	0.00014	0.032	7.8E-05	0.0023	0.047	0.077	0.000035 U	0.00095
MW-11B	3/29/2000	0.043	0.002	0.002 J	0.0006 JB	0.016	0.0008 JB	0.003	0.014	0.079	0.0007 U	0.001 J
MW-11B	9/22/2000	0.3	0.003	0.013	0.0005 U	**0.18**	0.001 J	0.011	0.16	**1.5**	0.0002 U	0.005
MW-11B	4/25/2001	0.2	0.003	0.011	0.0005 U	**0.1**	0.0004 U	0.011	0.11	0.47	0.0002 U	0.005
MW-11B	9/27/2001	0.14	0.003	0.005	0.0005 U	0.068	0.0004 U	0.004	0.072	**0.5**	0.0002 U	0.003
MW-11B	3/14/2002	0.15	0.004	0.007	0.0005 U	0.078	0.0005 J	0.007	0.087	0.22	0.0002 U	0.003
MW-11B	9/24/2002	0.21	0.003	0.009	0.0004 U	**0.12**	0.0008 J	0.008	0.12	**0.7**	0.00006 U	0.004
MW-11B	3/16/2004	0.0486	0.001163	0.000854	0.00018 U	0.01581	0.00035 J	0.001971	0.0112	0.01168	0.0001 U	0.000991
MW-11B	3/1/2005	0.0131	0.00031 J	0.00025 J	0.00037 U	0.00027 J	0.0003 J	0.000589	0.0001 J	0.00006 U	0.00004 U	0.00025 J
MW-11B	7/19/2005	0.0577	0.000799	0.0024	0.000352 U	0.0289	0.00036 J	0.00159	0.0261	0.186	0.00004 U	0.000745
MW-11B	1/5/2006	0.0537	0.000617	0.00269	0.000352 U	0.0261	0.00013 J	0.00189	0.0259	0.0025	0.00004 U	0.000873
MW-11B	7/31/2006	0.0707	0.00119	0.00345	0.00026	0.0359	0.00042	0.00245	0.0336	0.1	0.00007 U	0.00122
MW-11B	1/23/2007	0.0125	0.000315	0.000523	0.00009 U	0.00295	0.0001 U	0.000549	0.00231	0.00013 J	0.00007 U	0.000319
MW-11B	7/17/2007	0.088	0.00114 U	0.00396 J	0.0019 U	0.0411	0.00362 U	0.0029 J	0.0353	0.0901	0.00267 U	0.00146 J
MW-11B	1/28/2008	0.0649	0.00028 U	0.00236	0.00021 J	0.0273	0.00019 U	0.00175	0.0297	0.0354	0.00019 U	0.000848
MW-11B	7/16/2008	0.12	0.00126	0.00472	0.00021 U	0.0649	0.00021 U	0.00383	0.0578	0.0772	0.00021 U	0.00163

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
MW-11B	1/22/2009	0.072	0.0007 U	0.0022 J	0.0012 U	0.031	0.0007 U	0.0018 J	0.032	0.0008 U	0.0015 U	0.0009 U
MW-11B	7/22/2009	0.12	0.0015 J	0.0043 J	0.0033 U	0.054	0.0005 U	0.0036 J	0.053	0.048	0.0005 U	0.002 J
MW-11B	1/21/2010	0.048	0.0013 J	0.0011 J	0.0033 U	0.012	0.0005 U	0.0014 J	0.013	0.0006 U	0.0005 U	0.0005 U
MW-11B	7/13/2010	0.22	0.001 J	0.011	0.0033 U	0.096	0.001 J	0.0092 UJ	0.112	0.0136	0.001 J	0.0044 UJ
MW-11B	1/11/2011	0.039	0.0012 J	0.0006 U	0.0033 U	0.006	0.0005 U	0.0015 J	0.0038 J	0.0006 U	0.0005 U	0.0005 U
MW-11B	7/12/2011	0.084	0.0012 J	0.0054	0.0005 U	0.038	0.0005 U	0.0046 J	0.046	0.06	0.0005 U	0.0024 J
MW-11B	1/30/2012	0.025	0.0011 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0013 J	0.0005 U	0.0005 U	0.0005 U	0.0005 U
MW-11B	7/10/2012	0.1	0.0013 J	0.0055	0.0005 U	0.04	0.0005 U	0.0053	0.054	0.004 J	0.0005 U	0.0024 J
MW-11B	1/9/2013	0.0631	0.00136	0.000168 J	0.00195	0.00352	0.0001 U	0.00307	0.00205	0.0000755 U	3.77E-05 U	0.00154
MW-11B	7/11/2013	0.108	0.00119	0.00321	0.000356 U	0.0231	0.00011 U	0.00383	0.0388	0.00535	3.85E-05 U	0.00196
MW-11B	1/8/2014	0.0603	0.00102	0.00242	0.000493 J	0.0111	0.00032 J	0.00267	0.0195	0.000382 J	0.000037 U	0.00126
MW-11B	7/2/2014	0.0953	0.00166	0.00375	0.000349 U	0.0199	0.00011 J	0.00417	0.0339	0.0135	3.77E-05 U	0.00213
MW-11B	1/15/2015	0.0472	0.00113	0.000945	0.00037 U	0.00472	0.00011 U	0.00201	0.00867	0.00008 U	0.00004 U	0.000935
MW-11B	7/8/2015	0.057	0.00065	0.0025	0.00019 U	0.014	4.4E-05 U	0.0034	0.025	0.0021 U	0.000035 U	0.0017
P-10	3/28/2000	0.51	0.00176	0.022	0.0008 JB	**0.16**	0.0006 JB	0.014	0.28	**4.32**	0 U	0.006
P-10	9/26/2000	0.39	0.0002 U	0.024	0.0005 U	**0.16**	0.0007 J	0.017	0.23	**4.4**	0.0002 U	0.008
P-10	4/25/2001	0.32	0.0002 U	0.021	0.0005 U	**0.11**	0.0004 U	0.015	0.19	**3.8**	0.0002 U	0.006
P-10	9/27/2001	0.3	0.0002 U	0.013	0.0005 J	**0.13**	0.0004 U	0.01	0.17	**3.2**	0.0002 U	0.006
P-10	3/13/2002	0.36	0.002	0.012	0.001 J	**0.14**	0.0004 U	0.008	0.17	**2.3**	0.0002 U	0.003
P-10	9/25/2002	0.042	0.0004 J	0.001 J	0.0009 J	0.011	0.003	0.001 J	0.013	0.2	0.00006 U	0.0005 J
P-10	3/16/2004	0.000074 U	0.000076 U	0.000124 U	0.000172 U	0.000076 U	0.00038 J	0.000093 U	0.000068 U	0.000067 U	9.53E-05 U	0.000084 U
P-10	3/3/2005	0.00453	0.00008 J	0.00015 J	0.000836	0.000892	0.00028 J	0.00015 J	0.000723	0.0142	0.00004 U	0.00009 U
P-10	7/19/2005	0.0737	0.000476	0.00346	0.000352 U	0.0314	0.00048	0.0024	0.0364	0.464	0.00004 U	0.00102
P-10	1/5/2006	0.102	0.00006 U	0.0057	0.000359 U	0.0325	0.00011 U	0.00273	0.048	0.433	0.00004 U	0.00108
P-10	7/31/2006	0.0346	0.00016 J	0.000981	0.00016 J	0.00945	0.00032	0.000924	0.0115	0.062	0.00007 U	0.00046
P-10	1/23/2007	0.0165	0.00008 U	0.000437	0.00009 U	0.0044	0.0001 U	0.00004 U	0.00541	0.0204	0.00007 U	0.000215
P-10	7/17/2007	0.0688	0.00114 U	0.00319 J	0.0019 U	0.0272	0.00362 U	0.0021 J	0.0291	0.297	0.00267 U	0.001 J
P-10	1/28/2008	0.00373	0.00028 U	0.000703	0.00023 J	0.000713	0.00019 U	0.000506	0.000668	0.00038 U	0.00019 U	0.00039 J
P-10	7/16/2008	0.0106	0.00053	0.000747	0.00022 J	0.00176	0.00092 J	0.00022 J	0.00245	0.00079	0.00021 U	0.00021 U
P-10	1/22/2009	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0015 U	0.0009 U
P-10	7/22/2009	0.0044 J	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	1/22/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	7/14/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	1/12/2011	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-10	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-10	1/10/2013	0.0000755 U	0.0000566 U	4.72E-05 U	0.000906	7.55E-05 U	0.0001 U	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.000104 U
P-10	7/11/2013	0.0000808 U	0.0000606 U	0.000133 J	0.000492 J	8.08E-05 U	0.00011 U	0.0000707 U	0.0000707 U	0.0000808 U	4.04E-05 U	0.000111 U
P-10	1/9/2014	0.000102 J	0.0000556 U	0.000323 J	0.000343 U	7.41E-05 U	0.00026 J	0.0000648 U	0.0000648 U	0.0000741 U	0.000037 U	0.000102 U
P-10	7/2/2014	0.01	0.0000588 U	0.000375 J	0.00127	0.00205	0.00011 U	0.00042 J	0.00393	0.0000784 U	3.92E-05 U	0.000318 J
P-10	1/15/2015	0.00008 U	0.00006 U	0.000122 J	0.000853	0.00008 U	0.00011 U	0.000114 J	0.00007 U	0.00008 U	0.00004 U	0.00011 U
P-10	7/8/2015	0.023	0.00012	0.00039	0.0006	0.0024	4.4E-05	0.0006	0.0046	0.019	0.000035 U	0.00038

TABLE VII.A.2
SWMU NO. 1 B-TZ UNIT GROUNDWATER MONITORING DATA
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TX

Well ID	Constituent	Acenaphthene	Acenaphthylene	Anthracene	bis(2-Ethylhexyl) phthalate	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Naphthalene	Phenol	Pyrene
	PCL (mg/L)	1.5	1.5	7.3	0.006	0.098	2.4	0.98	0.98	0.49	7.3	0.73
P-12	3/28/2000	0 U	0 U	0 U	0.001 JB	0 U	0.0008 JB	0 U	0 U	0.0001 J	0.0001 J	0.01
P-12	9/25/2000	0.0003 U	0.0002 U	0.0004 U	0.001 J	0.0003 U	0.0006 J	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.013
P-12	4/24/2001	0.0003 U	0.0002 U	0.0004 U	0.0005 U	0.0003 U	0.0004 U	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.009
P-12	9/27/2001	0.0003 U	0.0002 U	0.0004 U	0.0007 J	0.0003 U	0.0006 J	0.0004 U	0.0003 U	0.0005 J	0.0002 U	0.01
P-12	3/14/2002	0.0003 U	0.0002 U	0.0004 U	0.0005 U	0.0003 U	0.0004 U	0.0004 U	0.0003 U	0.0003 U	0.0002 U	0.0003 U
P-12	9/25/2002	0.00007 U	0.00006 U	0.00009 U	0.0004 U	0.00007 U	0.001 J	0.00009 U	0.00007 U	0.0001 U	0.00006 U	0.006
P-12	3/17/2004	0.000074 U	0.000076 U	0.000124 U	0.001748	0.000076 U	0.00092	0.000093 U	0.000068 U	0.000067 U	9.53E-05 U	0.007348
P-12	3/3/2005	0.00007 U	0.00006 U	0.00007 U	0.00035 U	0.00008 U	0.00013 J	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00592
P-12	7/18/2005	0.00007 U	0.00006 U	0.00007 U	0.000431 J	0.00008 U	0.00053	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00767
P-12	1/6/2006	0.00007 U	0.00006 U	0.00007 U	0.000352 U	0.00008 U	0.00011 U	0.00008 U	0.00007 U	0.00006 U	0.00004 U	0.00615
P-12	7/28/2006	0.00004 U	0.00008 U	0.00004 U	0.00011 J	0.00006 U	0.00017 J	0.00004 U	0.00004 U	0.00007 U	0.00007 U	0.00545
P-12	1/22/2007	0.00004 U	0.00008 U	0.00004 U	0.00009 U	0.00006 U	0.0001 U	0.00004 U	0.00004 U	0.00007 U	0.00007 U	0.00312
P-12	7/17/2007	0.00114 U	0.00114 U	0.000952 U	0.0019 U	0.0041 U	0.00362 U	0.000952 U	0.000952 U	0.00124 U	0.00267 U	0.0075 J
P-12	1/29/2008	0.00029 U	0.00029 U	0.000645	0.00019 U	0.00029 U	0.00019 U	0.00019 U	0.00019 U	0.00038 U	0.00019 U	0.00932
P-12	7/16/2008	0.0003 U	0.0003 U	0.000552	0.00034 J	0.0003 U	0.00085 J	0.0002 U	0.0002 U	0.000626	0.0002 U	0.00211
P-12	1/22/2009	0.0008 U	0.0007 U	0.0007 U	0.0012 U	0.0007 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0015 U	0.0026 J
P-12	7/22/2009	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	1/22/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	7/14/2010	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	1/12/2011	0.0009 U	0.0005 U	0.0006 U	0.0033 U	0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U
P-12	7/12/2011	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	1/31/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	7/11/2012	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
P-12	1/9/2013	0.0000755 U	0.0000566 U	4.72E-05 U	0.00142	7.55E-05 U	0.0001 U	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.000104 U
P-12	7/11/2013	0.00008 U	0.00006 U	0.00005 U	0.00039 J	0.00008 U	0.00011 U	0.00007 U	0.00007 U	0.00008 U	0.00004 U	0.00011 U
P-12	1/9/2014	0.0000741 U	0.0000556 U	0.0002 J	0.000515 J	7.41E-05 U	0.00042 J	0.0000648 U	0.0000648 U	0.0000741 U	0.000037 U	0.000102 U
P-12	1/15/2015	0.00008 U	0.00006 U	0.00005 J	0.00037 J	0.00008 U	0.00011 J	0.00007 U	0.00007 U	0.00008 U	0.00004 U	0.00152
P-12	7/2/2014	0.0000755 U	0.0000566 U	0.000189 J	0.000439 J	7.55E-05 U	0.00014 J	0.000066 U	0.000066 U	0.0000755 U	3.77E-05 U	0.00189
P-12	7/8/2015	0.000027 U	0.000015 U	0.000014 U	0.00055 J	0.00002 U	0.00002 U	0.00001 U	0.00003 U	0.00002 U	0.000035 U	0.000019 U

Notes:

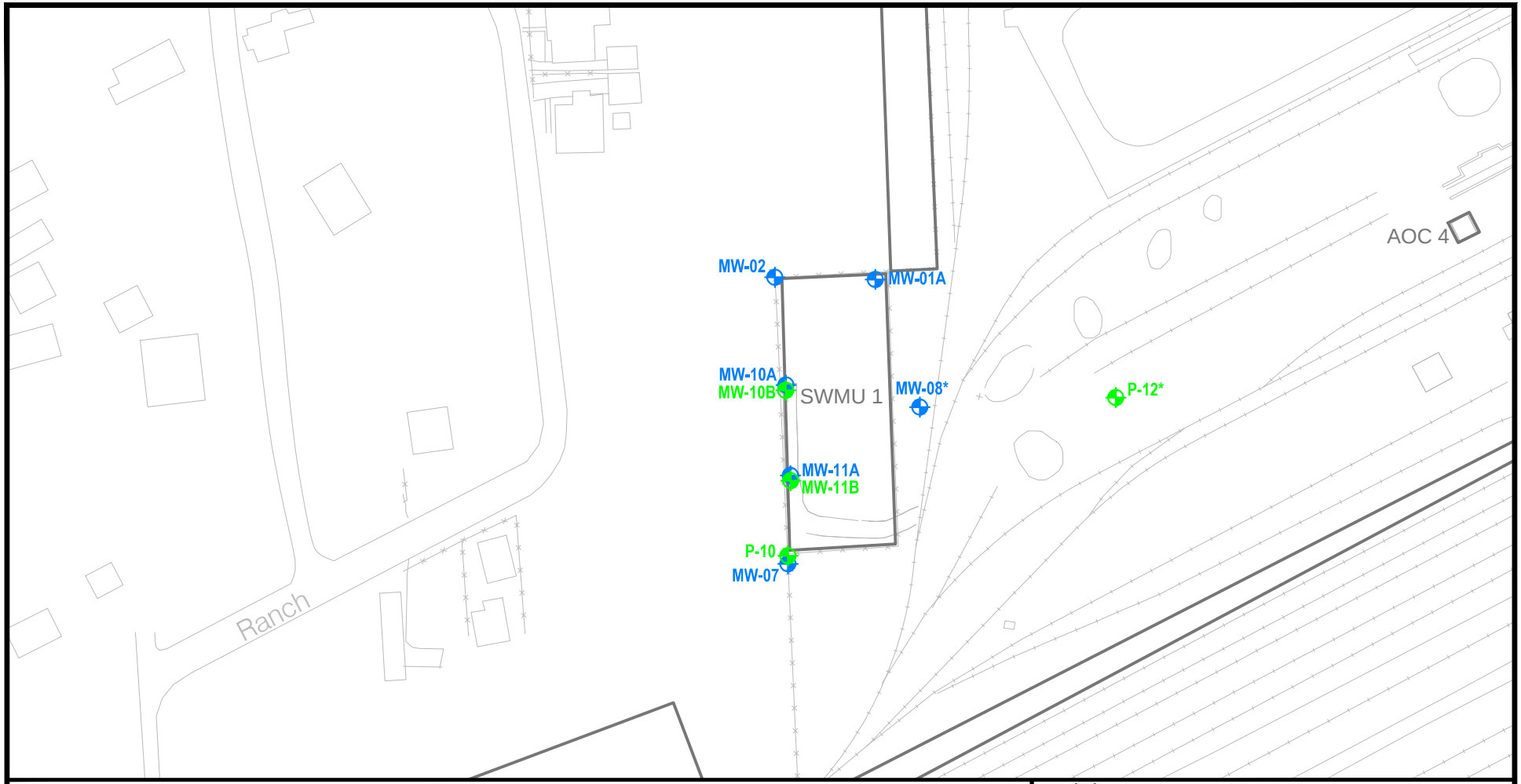
PCL = Protective Concentration Level

J = Estimated value between the SDL and the MQL

U = Value not detected greater than the MQL

Bolded concentrations exceed PCL.

FIGURES



EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-TZ Monitoring Well Location

Note:
* Background well.

N

Approx. Scale in Feet

0 60 120

Source:
Base map from ERM-Southwest, Inc 0014419a310.dwg, 6/19/2006.

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure VII.A

SITE MAP
SWMU No. 1

PROJECT: 1358	BY: AJD	REVISIONS
DATE: NOV., 2014	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Figure VII.B
2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

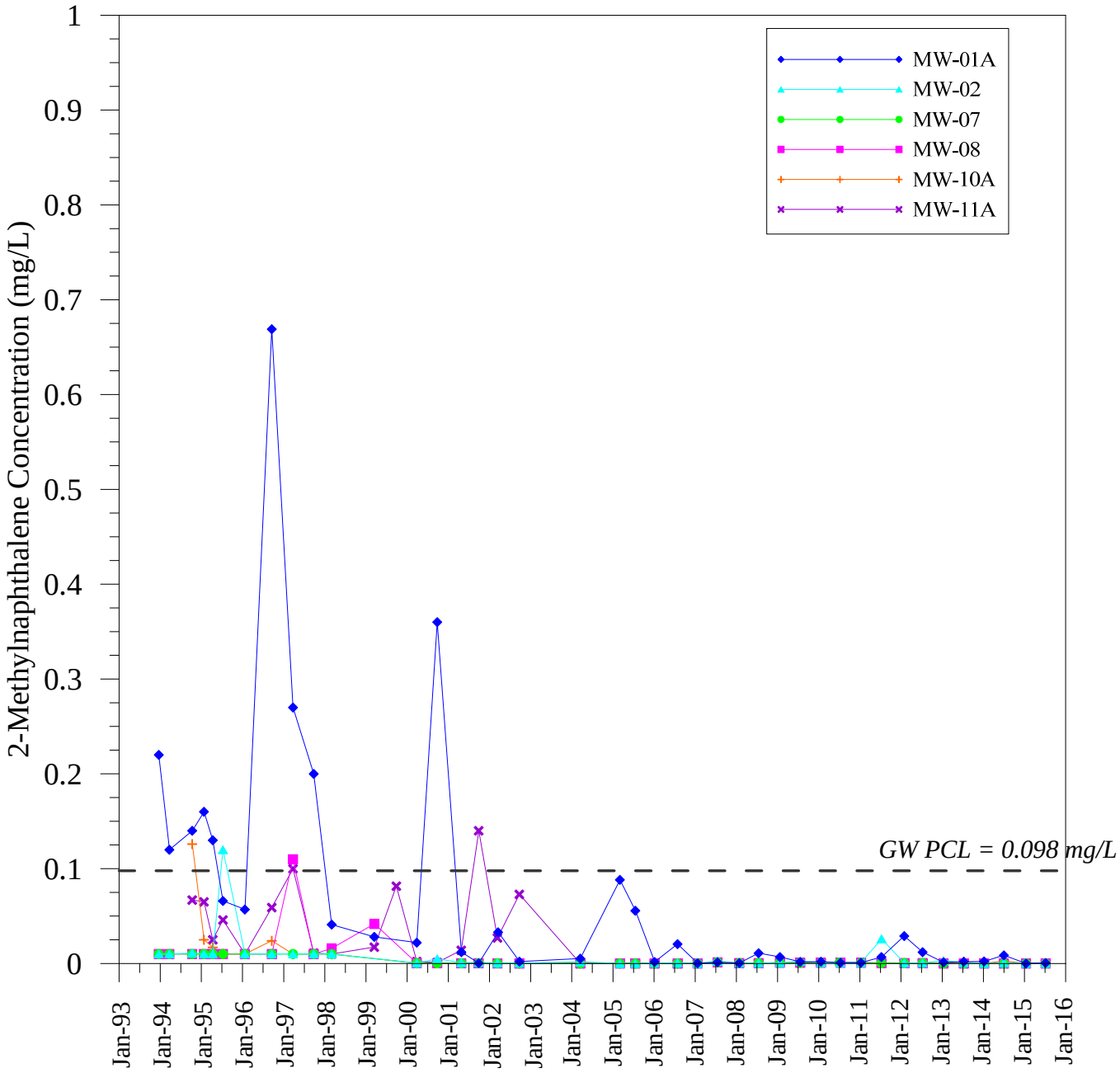


Figure VII.C
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

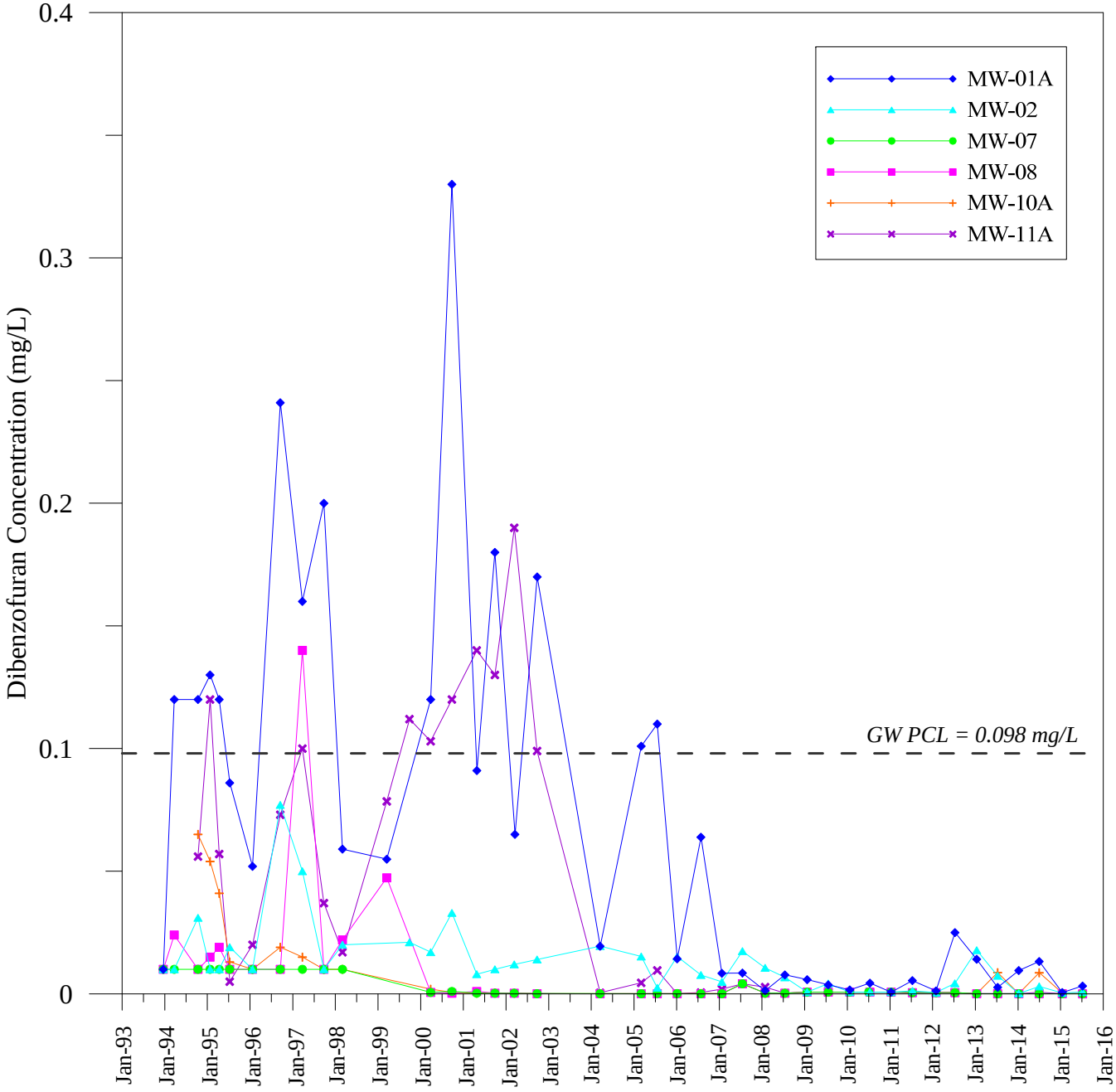


Figure VII.D
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

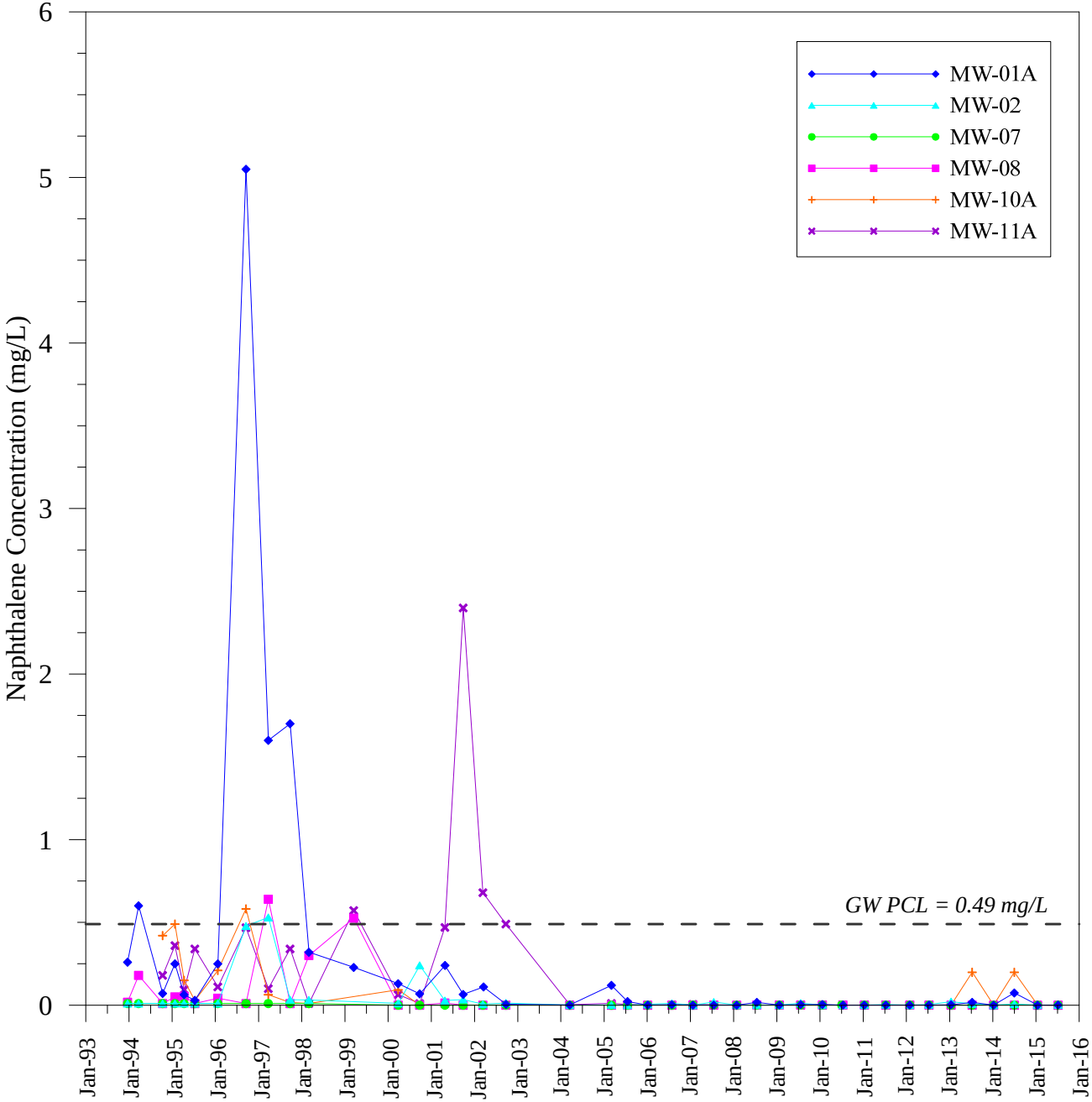
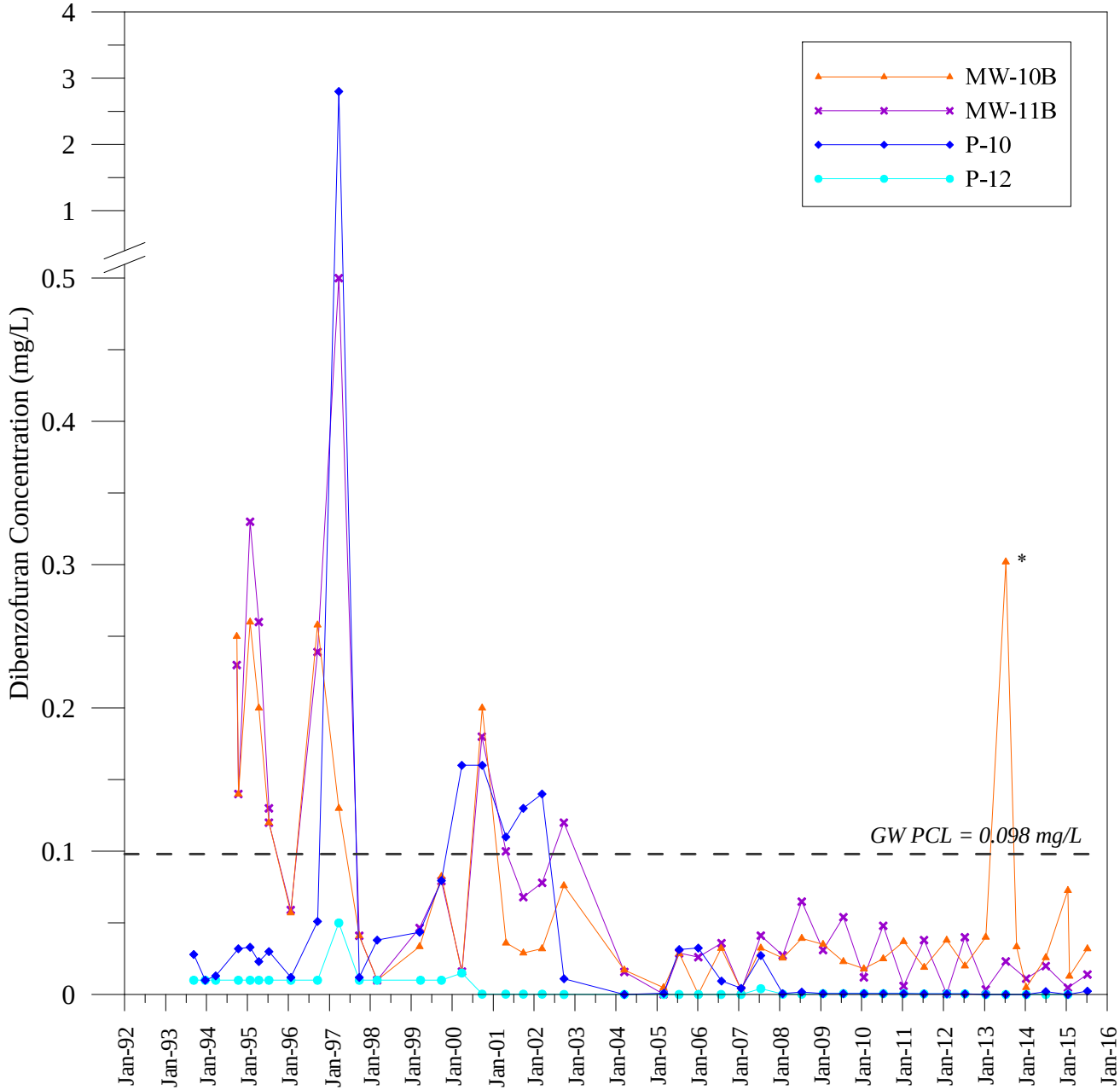
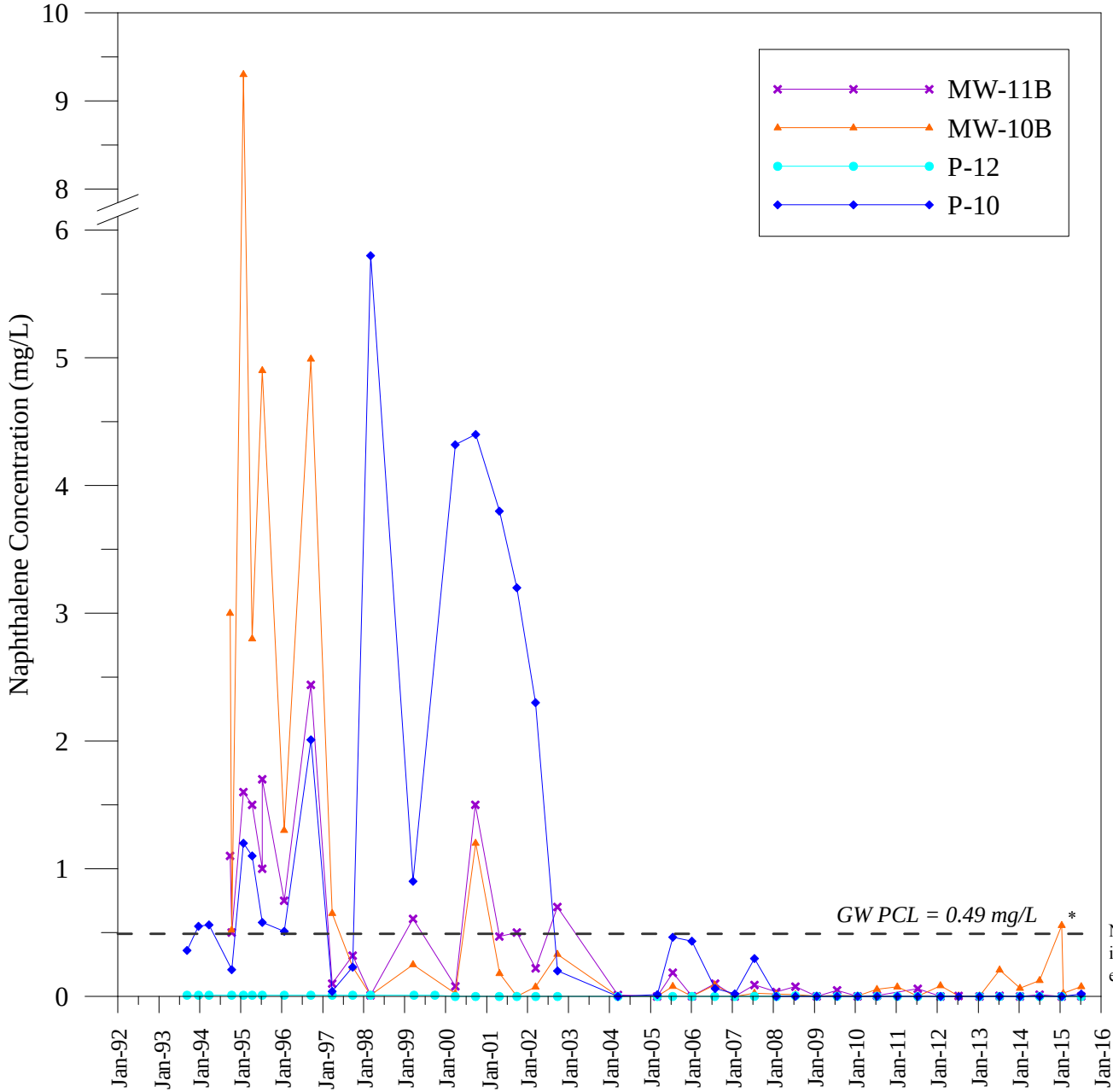


Figure VII.E
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



Note: * Resample of dibenzofuran at MW-10B in July 2013 did not verify the initial PCL exceedance.

Figure VII.F
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



Note: * Resample of napthalene at MW-10B in January 2015 did not verify the initial PCL exceedance.

PART B PERMIT RENEWAL

SECTION IX – REPLACEMENT PAGES

IX. RELEASES FROM SOLID WASTE UNITS AND CORRECTIVE ACTION

IX.A.1 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 001/SWMU 1

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 001/SWMU No. 1

B. Description: Landfill, D80

C. Dates of Operation: 1979-1982

II. Wastes Managed: Creosote-contaminated soil, sawdust, and tank bottoms.

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: Soil, groundwater~~NA~~

V. Summary: Solid Waste Management Unit (SWMU) 1 is an inactive surface impoundment (SI) and is a grass-covered section of land located at the southwest comer of the facility property. The SI is bordered on the southern side by an earthen berm, which is about 2 feet by 3 feet by about 80 to 100 feet long. The berm extends about 100 feet south of the southwest corner of the SI. A chain-link security fence is located along the northern and western margins of the SI. The original dimensions of the unit were about 180 feet by 106 feet at the surface, extending to a depth of about 7 feet bgs (SPTCo, 1991). Based on these dimensions, the SI would have a capacity of 133,560 cubic feet (about 4,950 cubic yards). According to SPTCo facility representatives, a clay liner was installed during the original construction of the SI. No information was available concerning the thickness and engineering properties of the liner. According to SPTCo representatives, the SI was built in 1979 for the disposal of contaminated surface soils remediated from an adjacent low-lying ponding area (AOC 6). Surface soils from the ponding area were remediated in response to a fire in 1979 and the discovery of contaminated soils. Installation of the SI was based on an agreement with the Texas Department of Water Resources (TDWR) for disposal of the soils.

In 1984, SPTCo closed the SI by excavating the soils and materials contained within. The visual hazardous material was removed along with apparent contaminated soil. An additional 3-inches of soil was then removed. The area was then divided into 50-foot grids which were randomly selected for sampling. Between 10 and 15 grab samples not more than 6-inches deep were homogenized and analyzed for K001 listed waste parameters and polynuclear aromatic hydrocarbons (PAHs). When soil confirmation sample concentrations were lower than those of background samples, the excavated area was backfilled with compacted clay and a groundwater monitoring system was installed (Rollins, 1984).

In 1991, a series of six soil borings were drilled within the same six grid areas that were sampled during the 1984 closure operations (Geo Associates, 1991). Four samples were collected from each of the borings from the following zones: the surficial clay fill, between the clay fill and the uppermost sand, the uppermost sand, and below the uppermost sand unit. These samples were analyzed for BTEX, TPH and semi-volatiles.

Bis (2-ethylhexyl) phthalate was detected in two samples at concentrations well below the TCEQ Texas Risk Reduction Program (TRRP) Protective Concentration Limits (PCL). Xylene, ethylbenzene and toluene were also detected, but at concentrations well below the PCL. The 1991 soil sampling results indicated that the source of contamination had been removed by the 1984 closure activities (SPTCo, 1991).

In 1984, the facility then began investigating and monitoring the shallow ground water in the vicinity of the SI. Between 1984 and 1991, nine groundwater monitoring wells were installed in the upper zone, and three piezometers were installed in the lower permeable zone. Hydrogeological data collected from these wells and piezometers indicate hydraulic conductivity between the zones. Analytical data compiled from 1984 until 1991 indicated that benzene, toluene, naphthalene, 2,4-dimethylphenol, and phenol were the most frequently detected parameters and that naphthalene was the parameter detected at the highest concentrations.

The facility entered into post-closure care in 1994, updated in 2005, and groundwater monitoring has taken place on a semi-annual basis since that time. Analytical results are compared to the TRRP PCLs. Since 2006, constituent concentrations have been below their respective PCLs.

VI. Recommended Action: ~~No further action recommended.~~ The surface impoundment was ~~clean~~ closed in 1984 with all waste and contaminated soils removed. The unit~~,~~ is in post-closure care and has been regulated under a post-closure care permit. Additionally, concentrations in groundwater have been below PCLs for ~~sixteen~~ 20 consecutive semi-annual monitoring events (~~8~~10 years). At this time the groundwater will be monitored under a compliance monitoring plan program detailed in Section XI. ~~Therefore, it is recommended to cease all post-closure care activities including inspection and groundwater monitoring. Upon TCEQ approval, the existing monitoring wells for SWMU No. 1 will be plugged and abandoned.~~

IX.A.3 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 003

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 003

B. Description: Tank (sub-surface), S02

C. Dates of Operation: Unknown

II. Wastes Managed: Unknown

III. Evidence of Release: See NOR 002/SWMU 7

IV. Pollutant Dispersal Pathways: SoilNA

V. Summary: No information regarding the sub-surface tank is available. The tank was reported to be the vicinity of SWMU 7.

VI. Recommended Action: No further action recommended. The unit is addressed in the facility-wide corrective action detailed in the Compliance Plan.

IX.A.4 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 004

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 004

B. Description: Container storage area, S01

C. Dates of Operation: 1995-Present

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
00029032	Non-haz	General refuse from office & site operations
04003011	Non-haz	Petroleum contaminated solids generated as part of corrective action work performed on-site.
14773012	Non-haz	Petroleum contaminated soils generated as part of site investigation and corrective action
14781011	Non-haz	Petroleum contaminated purge water generated as part of groundwater monitoring and investigation
14791012	Non-haz	Petroleum-affected purge water generated as part of groundwater monitoring and investigation
14804062	Non-haz	Plastic and used personal protective equipment generated as a result of monitoring well and/or soil sampling
14841012	Non-haz	Petroleum contaminated purge water generated as part of groundwater monitoring and investigation
0001301H	F034, K001	Soil generated primarily by the boring of monitor wells around the ~~clean~~ closed wood preserving operation surface impoundment.
0909101H	K001, F034	Aqueous Waste with low surfactants. Groundwater generated from drilling activities for investigative purposes.
0912489H	F034, K001	Creosote sludge, soil mixture generated as part of corrective action performed on-site.
0914101H	F034, K001	Groundwater generated from purging of various monitor wells for investigative purposes.
0915301H	F034, K001	Soil derived from the boring of monitor wells for investigative purposes.
09163081	Non-haz	Empty drums previously used to contain monitor well purge water
0917406H	K001	Plastic and used personal protective equipment generated as a result of monitor well and/or soil sampling.
09133192	Non-haz	Contaminated clothing & personal protective equipment generated from corrective action work performed on-site
0918219H	F034, K001, U051	Recovered creosote NAPL from groundwater monitoring wells

TCEQ Waste Code	EPA Waste Code	Waste Description
1481514H	D002	Drilling mud from boring monitor wells for investigative purposes
1482110H	D002	Purge water generated as part of groundwater monitoring and investigation
14835142	Non-haz	Drilling mud from boring monitor wells for investigative purposes

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: SoilNA

V. Summary: The container storage area is an approximately 25 by 18 foot concrete pad surrounded by chain-link fencing and is used as a temporary drum storage.

VI. Recommended Action: No further action recommended. No evidence of a release has been identified at the unit. However, the unit is within the larger SWMU 5 – Original Process Area where evidence of historical releases have occurred.

IX.A.5 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 005

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 005

B. Description: Waste Pile, S03

C. Dates of Operation: 1907-2010

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
09024882	Non-haz	Waste rail ties generated from operation & maintenance of the railroad & are generated intermittently
09103072	Non-haz	Ferrous scrap metal generated from operation & maintenance of the railroad & is generated on an intermittent basis
09113072	Non-haz	Non-Ferrous scrap metal generated from operation & maintenance of the railroad & is generated on an intermittent basis

III. Evidence of Release: No evidence of a release.

IV. Pollutant Dispersal Pathways: Soil~~NA~~

V. Summary: Ferrous and non-ferrous scrap metal and waste rail ties generated from operation and maintenance of the railroad was generated on an intermittent basis. The location of NOR 005 is in the vicinity of SWMU 12. UPRR will no longer store these wastes at this unit.

VI. Recommended Action: No further action. This unit has not managed hazardous wastes or wastes containing hazardous substances and no evidence of a release was reported.

IX.A.6 PRELIMINARY REVIEW UNIT CHECKLIST – NOR 006

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: 006

B. Description: Miscellaneous Storage Containers, S99 (location unknown)

C. Dates of Operation: 1995-2006 (approximate)

II. Wastes Managed:

TCEQ Waste Code	EPA Waste Code	Waste Description
2012061	Non-haz	Waste oil generated from 4 fork lifts operating on-site

III. Evidence of Release: No evidence of a release

IV. Pollutant Dispersal Pathways: Soil ~~NA~~

V. Summary: Waste oil generated at this unit was derived from fork lifts on the property which, at maintenance intervals, had oil pumped directly out of their crankcases by a commercial recycler. In a letter to the Texas Natural Resource Conservation Commission dated August 8, 1995, Edward Hurst, the Director of Environmental Compliance for Southern Pacific Lines explained that the commercial recycler pumped the oil directly into a recycling truck and it was immediately removed from the property. None of these activities ar performed at the Site and this waste code will be removed from the NOR.

VI. Recommended Action: No further action. This unit has not managed hazardous wastes or wastes containing hazardous substances and no evidence of a release was reported.

IX.A.7 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 2

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 2

B. Description: Northern and Southern Drainage Ditches, D99

C. Dates of Operation: Unknown

II. Wastes Managed: Creosote-contaminated wastewater and residual naphtha

III. Evidence of Release: The ditches released creosote contaminants to the soil and the inactive wastewater lagoon.

IV. Pollutant Dispersal Pathways: Soil and surface water (historically, when in operation)

V. Summary: The Northern Drainage Ditch (NDD) is located at the northwest corner of the SI and runs northward toward Ranch and Kashmere Streets. The Southern Drainage Ditch (SDD) was a wood-lined trench which was formerly located along the south side of the process area. The SDD paralleled railroad tracks from the eastern to western side of the facility and began near the AST area (SWMU 8). Near the southwest comer of the facility, the ditch was routed below railroad tracks via PVC piping. The piping led to a natural drainage ditch and low-lying area near the southwest comer of the SI, known as the inactive wastewater lagoon (AOC 6). The natural drainage ditch flowed off site to the west eventually into Buffalo Bayou (>8,500 feet from the Site). For the purpose of worker safety, the facility filled in the wood-lined portion of the ditch along the southern facility boundary. The PVC piping was plugged below the tracks at the southwestern end of the facility. While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action recommended. The unit is addressed in the facility-wide corrective action.

IX.A.11 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 6

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 6

B. Description: Water Treatment and Boiler System, T80

C. Dates of Operation: Unknown

II. Wastes Managed: Boiler and cooling tower blow-down

III. Evidence of Release: The following releases were documented from this unit: (1) Boiler condensate (ran off-site via surface runoff), (2) oily storm sewer discharge, and (3) discharges of boiler and cooling tower blowdown into the storm sewer.

IV. Pollutant Dispersal Pathways: Soil and surface water (historically when in operation)

V. Summary (PRC, 1993): SPTCo used the water treatment and boiler system to (1) treat and distill municipal water, and (2) generate steam used in heating the wood-treatment retort cylinders. Steam and heated water from the retort cylinders were cooled in a cooling tower prior to discharge. SPTCo representatives did not have specific information concerning the design or processes of the system, and the system is now inactive. According to SPTCo representatives, some of the buildings and equipment associated with the system have been removed and the area has been re-graded with gravel. During the VSI, PRC observed the treatment building, the former location of a water storage AST, and the former location of the boiler equipment. No other structures pertaining to the system were observed during the VSI. The treatment building is located north of the retort area (SWMU 4). It consisted of a metal building, about 40 by 20 feet with concrete flooring. The building was open along the south side and wooden pallet debris was observed covering the floor. According to SPTCo representatives, the building may have been used to house pump equipment.

Next to and east of the treatment building was a concrete tank enclosed in a metal building. The tank was rectangular, measuring about 30 by 15 feet. The tank was above ground. It had cinder block walls, about 3 feet tall by 1 foot wide. The tank opening was covered with wooden planking; rolls of chain-link fencing were stored on top. The view inside the tank was obscured, but standing water and wood debris were observed inside the tank. PRC could not determine whether the tank extended below grade. A 2- to 4-inch diameter pipe was observed extending from the south wall of the tank. A hard, white, granular accumulation of an unknown substance was observed around the open end of the pipe. SPTCo

representatives did not know the nature or cause of the accumulation and did not have any information concerning the function of the tank in the water treatment system.

A circular concrete foundation, about 25 feet in diameter, was observed next to and west of the treatment building. SPTCo representatives assumed that this was the location of a former water storage AST used in the treatment system. A rectangular concrete foundation, partially covered with gravel, was observed about 20 feet east of the treatment building. According to SPTCo representatives, this was the former location of the boiler equipment and building. The cooling tower was formerly located in the AST area east of the wood-treatment facility. SPTCo representatives had no specific information concerning the construction or operation of the cooling tower. The cooling tower was removed and the area re-graded with gravel (PRC, 1993).

While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action recommended. The unit is addressed in a facility-wide corrective action detailed in the Compliance Plan.

IX.A.12 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 8

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 8

B. Description: Aboveground Storage Tank Area, S02

C. Dates of Operation: Unknown

II. Wastes Managed: Tank bottoms (K001), creosote, extender mix and naphtha

III. Evidence of Release: A naphtha spill and a working tank explosion were documented

IV. Pollutant Dispersal Pathways: Soil, surface water (historically when in operation, groundwater

V. Summary: The AST area was formerly located east of the recent process area (SWMU 4) in the northeast comer of the facility. The area housed 14 ASTs and a below-grade product drop tank used to store creosote and extenders. In addition, a series of aboveground pipes and manifolds was used to transfer product and wastes between tanks and the process area retort cylinders. A 1981 site diagram of the wood-preserving works indicated that six of the tanks were classified as working tanks containing creosote and extenders pumped to and from the retort cylinders. The tanks, which were about 20 feet in diameter, were located next to the wood-treatment building. Three tanks classified as storage tanks were located along the south side of the recent process area. These tanks, which were about 30 feet in diameter, were used to store creosote pumped into the working tanks.

An AST, about 30 feet in diameter, and four naphtha storage tanks, about 10 feet in diameter, were located north of the working tanks. The naphtha tanks were used in the process of removing sap and moisture from untreated ties.

The product drop tank was a concrete tank, about 35 by 20 feet, located at the northeast corner of the AST area. SPTCo representatives stated that the tank was constructed of concrete and was about 12 feet deep. SPTCo representatives stated that the product drop tank was used for the off-loading of creosote and extenders from the railway prior to storage in the ASTs. The cooling tower was also located in the AST area.

Secondary containment consisted of a concrete retaining wall about 4 feet high by 1 foot wide. The facility

installed the wall to prevent surface water runoff into the storm sewers. Three circular concrete foundations were observed in the vicinity of the three creosote storage tanks. Remnants of the concrete retaining wall were also observed at the southeast and southwest comers of the AST area. The ASTs have been removed from the area and the area has been re-graded with gravel. Piping and commercially treated wood ties were observed being stored in the area.

While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

IX.A.14 PRELIMINARY REVIEW UNIT CHECKLIST – SWMU 10

Facility: Houston Wood Preserving Works City: Houston, Texas

ISW Reg No: 31547 Date: August 27, 2014

Permit No: 50343 Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: SWMU 10

B. Description: Location of Former Sap Water Treatment Tank, T01

C. Dates of Operation: Unknown

II. Wastes Managed: Wastewater containing naphtha, creosote residue and extender

III. Evidence of Release: No evidence of a release was discovered.

IV. Pollutant Dispersal Pathways: SoilNA

V. Summary: The sap water treatment tank was formerly located next to the AST area (SWMU 8) in the northeast corner of the facility property. SPTCo representatives had no information regarding the construction or capacity of the tank. A 1981 site diagram of the wood-treatment facility indicated that the tank was about 25 by 10 feet. Several concrete corner pads were observed in the vicinity of the tank location. The pads were identified as the tank foundation.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

IX.A.18 PRELIMINARY REVIEW UNIT CHECKLIST – AOC 2

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: AOC 2

B. Description: Hose House, S99

C. Dates of Operation: Unknown

II. Wastes Managed: NA

III. Evidence of Release: Signs of recent oil staining were visible inside hose house and minor staining was observed on the ground in the vicinity of a sewer drain.

IV. Pollutant Dispersal Pathways: Soil and surface water (historically when in operation)

V. Summary: The hose house was a metal building, measuring about 15 by 12 feet, with concrete flooring located southwest of the water treatment building. A 6 by 2 foot concrete slab was observed in the middle of the floor. An unidentified metal structure was observed on top of the concrete slab, and fresh oil staining was observed around the metal structure. The remains of a shower stall were observed at the eastern end of the building. An open sewer pipe, about 6 inches in diameter, was observed next to the building on the east side. A concrete ramp was located next to the sewer pipe, apparently to direct drainage from exposed piping observed extending from the eastern wall of the building. While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action. This unit has not managed hazardous wastes or wastes containing hazardous substances.

IX.A.21 PRELIMINARY REVIEW UNIT CHECKLIST – AOC 5

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: AOC 5

B. Description: City Storm Sewer, D99

C. Dates of Operation: NA

II. Wastes Managed: Boiler and cooling tower blowdown, potential runoff of creosote contaminated surface water from facility SWMU 1

III. Evidence of Release: Discharges were documented in 1980 and 1982.

IV. Pollutant Dispersal Pathways: Surface water (historically when in operation) and soil

V. Summary: The city storm sewer used to receive surface water runoff from the facility, including boiler and cooling tower blowdown and sap wastewater. A concrete retaining wall was built around the AST area (SWMU 8) to prevent potentially contaminated runoff from entering the sewer. Runoff features included several subsurface concrete boxes with steel grate tops located throughout the facility. Discharges to the storm sewer were reported in 1980 and 1982 resulting in the issuance of NOVs to the facility (SPTCo, 1993b). Details of the locations of the sewer lines were unavailable. While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

IX.A.22 PRELIMINARY REVIEW UNIT CHECKLIST – AOC 6

Facility: Houston Wood Preserving Works

City: Houston, Texas

ISW Reg No: 31547

Date: August 27, 2014

Permit No: 50343

Reviewer:

EPA ID No: TXD000820266

I. Waste Management Unit:

A. NOR No: AOC 6

B. Description: Inactive Wastewater Lagoon, S99

C. Dates of Operation: NA

II. Wastes Managed: Sap wastewater and surface water runoff (historically when in operation) containing creosote residue

III. Evidence of Release: In 1979, a fire exposed the presence of creosote-contaminated soils. The contamination was determined to have resulted from pooling of facility wastewater in this area.

IV. Pollutant Dispersal Pathways: Soil and surface water

V. Summary: The inactive wastewater lagoon is a low-lying area ~~off site~~, next to the inactive SI (SWMU 1). This area was periodically flooded and received discharges of sap wastewater and surface water runoff via the SDD (SWMU 2). In 1979, a fire in the area may have resulted from soil contamination within the area. The uppermost layer of soils in the lagoon area were scraped off and disposed of in the SI. The SDD was plugged to prevent further discharge into the area. The inactive wastewater lagoon was considered to be inactive following these actions. While surface water was historically identified as a release pathway in the RCRA Facility Assessment (PRC, 1984), it is no longer considered a pollutant dispersal pathway since the Facility is no longer in operation and these areas have been dismantled and/or regraded.~~The area is located outside of the facility boundary.~~

VI. Recommended Action: No further action recommended. The unit is addressed in a site wide Compliance Plan.

APPENDIX II
SUMMARY OF WASTES MANAGED
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

NOR	Waste Description	Class	TCEQ Waste Code	EPA Waste Code	Disposition	Health, Safety and Risk Information
001/SWMU 1	Surface Impoundment Area	NA	219, 301, 488, 609	F034, K001, U051, U188	Removed from site	See NOR 004
002/SWMU 7	Tank car	Unknown	Unknown	Unknown	No longer generated	--
003	Sub-surface Tank	Unknown	Unknown	Unknown	No longer generated	--
004	Container Storage Area (Corrective Action Remediation Wastes)	1	00029032	Non-haz	Inactive	--
		1	04003011	Non-haz	Active	--
		2	14773012	Non-haz	Active	--
		1	14781011	Non-haz	Active	--
		2	14791012	Non-haz	Active	--
		2	14804062	Non-haz	Active	--
		2	14841012	Non-haz	Inactive	--
		1	09163081	Non-haz	Inactive	--
		H	0001301H	F034, K001	Active	Avoid all contact. If inhaled, provide fresh air, respiratory support. If in contact with skin, wash with soap and water. Rinse with water if contact with eyes. Seek medical attention. **F034, K001, and U051 (Creosote)**: Carcinogen; respiratory tract irritation, mild skin irritation, eye irritation; skin cancer. TWA 0.2 mg/m3; LC50 (*Oncorhynchus mykiss* 96 hr) 0.57 mg/L (very toxic to aquatic life); LD50 (rat oral) 2197 mg/kg; LC50 rat inhalation 4 hr) > 5 mg/L; LD50 (rabbit skin) > 2500 mg/kg; Reference: Koppers Safety Data Sheet Rev 2.03000 dated March 27, 2015. **U188 (Phenol)**: Central nervous system impairment, upper respiratory tract irritation, lung damage; TWA 5 ppm (19 mg/m3); LC50 (golden orfe 48-hr) 14 - 25 mg/L; LD50 (rat oral) 317 mg/kg; LC50 (rat inhalation 8-hr) 900 mg/m3; LD50 (rabbit dermal) 630 mg/kg Reference: Sigma-Aldrich Safety Data Sheet Revision 5.7 June 17, 2015.
		H	0909101H	F034, K001	Active	
		H	0912489H	F034, K001	Active	
		H	0914101H	F034, K001	Active	
		H	0915301H	F034, K001	Active	
		H	0917406H	K001	Active	
		H	0918219H	F034, K001, U051	Active	
		H	1481514H	D002	Active	
		H	1482110H	D002	Active	
		2	14835142	Non-haz	Active	--
005	Waste Pile	2	09024882	Non-haz	No longer generated	--
		2	09103072	Non-haz	No longer generated	--
		2	09113072	Non-haz	No longer generated	--

APPENDIX II
SUMMARY OF WASTES MANAGED
UNION PACIFIC RAILROAD COMPANY
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS

NOR	Waste Description	Class	TCEQ Waste Code	EPA Waste Code	Disposition	Health, Safety and Risk Information
006	Miscellaneous Storage Containers	1	2012061	Non-haz	No longer generated	--
SWMU 2	Northern and Southern Drainage Ditches	Unknown	Unknown	Unknown	No longer generated	--
SWMU 3	Oil Drum Storage (ODS) Building	Unknown	Unknown	Unknown	No longer generated	--
SWMU 4	Recent Process Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 5	Original Process Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 6	Water Treatment and Boiler System	Unknown	Unknown	Unknown	No longer generated	--
SWMU 8	Aboveground Storage Tank Area	Unknown	Unknown	Unknown	No longer generated	--
SWMU 9	Location of Former UST No. 44-023-05	Unknown	Unknown	Unknown	No longer generated	--
SWMU 10	Location of Former Sap Water Treatment Tank	Unknown	Unknown	Unknown	No longer generated	--
SWMU 11	Oil Water Separators	Unknown	Unknown	Unknown	No longer generated	--
SWMU 12	Railroad Tie Storage Area	Unknown	Unknown	Unknown	No longer generated	--
AOC 1	Diesel Storage Tank	Unknown	Unknown	Unknown	No longer generated	--
AOC 2	Hose House	Unknown	Unknown	Unknown	No longer generated	--
AOC 3	Contaminated Portion of City Water Line	Unknown	Unknown	Unknown	No longer generated	--
AOC 4	Location of Former Incinerator	Unknown	Unknown	Unknown	No longer generated	--
AOC 5	City Storm Sewer	Unknown	Unknown	Unknown	No longer generated	--
AOC 6	Inactive Wastewater Lagoon	Unknown	Unknown	Unknown	No longer generated	--
AOC 7	Location of Former UST No. 44-023-21	Unknown	Unknown	Unknown	No longer generated	--