UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

PERMIT
FOR CORRECTIVE ACTION

FMC CORPORATION
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND
EPA ID NO. MDD003071875

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Permittee: FMC Corporation

Permit Number: MDD003071875

Facility: 1701 East Patapsco Avenue, Baltimore, Maryland

INTRODUCTION

The United States Environmental Protection Agency (EPA) under the authority of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. § 6901 et seq., and the regulations promulgated thereunder and set forth at 40 C.F.R. Parts 260-271, is hereby issuing this permit for corrective action (Permit) to FMC Corporation (Permittee) for its facility located at 1701 East Patapsco Avenue, Baltimore, Maryland (Facility).

The complete RCRA permit for purposes of Section 3005(c) of RCRA, 42 U.S.C. §6925(c), consists of two portions: this Permit and the Controlled Hazardous Substance permit (Permit Number A-023) issued by the Maryland Department of the Environment (MDE) on September 19, 2017 (MDE Permit). This Permit addresses the provisions of HSWA and will be enforced by EPA. The MDE Permit addresses the provisions of the Code of Maryland Regulations, (COMAR), Title 26, Subtitle 13, for which the State of Maryland (State) has received authorization under Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), to carry out such program in lieu of the federal hazardous waste management program under RCRA. The MDE Permit will be enforced by MDE, but EPA may also exercise its enforcement discretion if and when appropriate.

This Permit is based on information provided to EPA by the Permittee and MDE; specifically, the Permittee submitted an application with attachments on July 29, 2022 for renewal of the corrective action permit, previously issued on January 30, 2013, effective on January 30, 2013 and expired on January 30, 2023. Section 3005(c)(3) of RCRA provides EPA the authority to review and amend the Permit at any time. Any inaccuracies found in the information submitted by the Permittee may be grounds for the termination, modification or revocation and reissuance of this Permit (see 40 C.F.R. §§ 270.41, 270.42 and 270.43). The Permittee must inform EPA of any deviation from or changes in the submitted information which would affect the Permittee's ability to comply with the applicable statutes, regulations or permit conditions.

The Permittee shall comply with all terms and conditions set forth in this Permit, including the attachments hereto. Additionally, the Permittee shall comply with all applicable federal regulations, including 40 C.F.R. Parts 260 through 264, Part 266, Part 268, Part 270, Part 273 and Part 124. Nothing in this Permit shall limit EPA's authority to undertake, or require any person to undertake, response action or corrective action under any law, including, but not limited to, Section 104 or 106 of CERCLA, 42 U.S.C. §§ 9604 and 9606, and Section 7003 of RCRA, 42 U.S.C. § 6973. Nor shall any permit condition relieve the Permittee of any obligations under any law,

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including, but not limited to, Section 103 of CERCLA, 42 U.S.C. § 9603 to report releases of hazardous wastes, constituents, or substances to, at, or from the Facility.

This Permit is effective on MMM DD, YYYY and shall remain in effect for 10 years pursuant to 40 CFR 270.50 unless revoked and reissued, modified or terminated in accordance with 40 C.F.R. §§270.41, 270.42, 270.43 or continued in accordance with 40 C.F.R. §270.51(a).

PART I - STANDARD CONDITIONS

A. DEFINITIONS

Pursuant to the authority granted by Section 3005(c)(3) of RCRA, 40 C.F.R. § 270.32(b)(2) and for the purposes of this Permit, terms used herein shall have the same meaning as those set forth in 40 C.F.R. Parts 260 through 264, 268 and 270, unless this permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the terms.

The following definitions also apply to this Permit:

1. Area of Concern - an area of concern is hereby defined for purposes of this Permit to mean an area at the facility or an off-site area, which is not at this time known to be a solid waste management unit, where hazardous waste and/or hazardous constituents are present or are suspected to be present as a result of a release from the Facility.

2. Days – except as otherwise provided herein, calendar days. If any requirement under the terms of this Permit would fall on a Saturday, Sunday or federal holiday, then the requirements shall be due on the following day.

3. Regional Administrator – the Regional Administrator for EPA Region III or his authorized representative.

4. Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

B. DUTIES AND REQUIREMENTS

1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit

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issued under 40 C.F.R. § 270.61 or the analogous provisions of the State's authorized hazardous waste management regulations. Any other permit noncompliance constitutes a violation of RCRA and is grounds for enforcement action; permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. (40 C.F.R. § 270.30(a))

2. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must apply for and obtain a new permit. (40 C.F.R. § 270.30(b))

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit. (40 C.F.R. § 270.30(c))

4. Duty to Mitigate

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (40 C.F.R. § 270.30(d))

5. Duty to Properly Operate and Maintain

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (40 C.F.R. § 270.30(e))

6. Duty to Monitor and Record Results

Pursuant to 40 C.F.R. § 270.30(j), the Permittee shall comply with the following requirements:

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All sampling and analyses shall be

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of adequate quality, scientifically valid, of known precision and accuracy, and of acceptable completeness, representativeness and comparability. Laboratory analysis of each sample must be performed using an appropriate method for testing the parameter(s) of interest taking into account the sample matrix. The test methods found in the EPA publication Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), 3rd Edition, as updated, shall be used for: the Toxicity Characteristic analytes (40 C.F.R. § 261.24); the Free Liquids Test (Method 9095) used to determine if free liquid is a component of a waste as a specific requirement for bulk and containerized wastes (40 C.F.R.. § 264.314(c)); and the chemical analysis of wastes for hazardous waste incineration permits. (40 C.F.R. § 270.62(b)(2)(i)(C))

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification required by 40 C.F.R. § 264.73(b)(9) and records of all data used to complete the application for this Permit for a period of at least three (3) years from the date of the sample, measurement, report, certification or application. This period may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this Facility. (40 C.F.R. § 264.74) The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations for the active life of the Facility, and for disposal facilities, for the post-closure care period as well. (40 C.F.R. § 270.30(j))

c. Records of monitoring information shall specify:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses.

7. Duty to Provide Information

The Permittee shall furnish, within a reasonable specified time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to

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determine compliance with this Permit. The Permittee shall also furnish to the Regional Administrator upon request, copies of records required to be kept by this Permit. (40 C.F.R. §§ 270.30(h) and 264.74(a))

8. Duty to Allow Inspection and Entry

Pursuant to 40 C.F.R. § 270.30(i), the Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

d. Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

9. Duty to Submit Certified Documents

a. Except for submissions for which the Permittee is asserting a business confidentiality claim pursuant to Paragraph 9.d. and e., below, 1 electronic copy of all draft and final plans, reports, notifications or other documents which are required by this Permit to be submitted to the Regional Administrator, shall be sent via electronic mail to:

Susanne Haug
RCRA Corrective Action Branch - West (3LD11)
EPA Region III
4 Penn Center
1600 John F. Kennedy Blvd.
Philadelphia, Pennsylvania 19103
haug.susanne@epa.gov

In addition, one electronic copy and one physical copy (paper, CD/DVD, or USB flash drive) of such submission shall be sent to:

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Al Simkins
Maryland Department of the Environment
Solid Waste Program (LMA)
1800 Washington Blvd., Suite 605
Baltimore, MD 21230-1719
albert.simkins@maryland.gov

b. Each report, notification or other submission shall reference the Permittee's name, permit number and Facility address.

c. All applications, reports or other information submitted to the Regional Administrator shall be signed and certified as described in 40 C.F.R. §§ 270.11 and 270.30(k).

d. The Permittee may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this Permit in the manner described in 40 C.F.R. § 2.203(b). Any assertion of confidentiality shall be adequately substantiated by the Permittee when the assertion is made in accordance with 40 C.F.R. § 2.204(e)(4). Information subject to a confidentiality claim shall be disclosed only to the extent allowed by, and in accordance with, the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to the Permittee. The Permittee shall not assert any confidentiality claim with regard to any physical, sampling, monitoring, or analytical data.

e. One hardcopy of all submissions for which the Permittee is asserting a business confidentiality claim pursuant to Paragraph 9.d, above, shall be sent Certified Mail, Return Receipt Requested, overnight mail, or hand-carried to:

RCRA Corrective Action Section - West (3LD11)
EPA Region III
4 Penn Center
1600 John F. Kennedy Blvd.
Philadelphia, Pennsylvania 19103

10. Duty to Maintain Documents at the Facility

Pursuant to 40 C.F.R. § 264.73, the Permittee shall maintain at the Facility (or other location approved by the Regional Administrator) during the term of this Permit, including any reissued permit, all documents and raw data, such as laboratory

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reports, drilling logs, and other supporting information generated from investigations required by this permit including amendments, revisions and modifications to these documents.

11. Duty to Minimize Waste

The Permittee shall certify no less often than annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that the Permittee generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage or disposal is the practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment. The Permittee shall maintain each such certification of waste minimization at the Facility until closure of such Facility. (40 C.F.R. §264.73(b)(9))

12. Duty to Comply with the Land Disposal Restrictions

All activities of the Permittee which involve the land disposal of hazardous waste are subject to the provisions of RCRA § 3004(b)-(m), 42 U.S.C. § 6924(b)-(m), and applicable regulations thereunder at 40 C.F.R. Part 268.

13. Reporting Requirements

a. Planned Changes

The Permittee shall give notice to the Regional Administrator, as soon as possible, of any planned physical alterations or additions to the Facility. (40 C.F.R. § 270.30(l)(1))

b. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Administrator of any planned changes in the Facility or activity which may result in noncompliance with permit requirements. (40 C.F.R. § 270.30(l)(2)) For a facility being modified, the permittee may not treat, store or dispose of hazardous waste in the modified portion of the facility except as provided in 40 C.F.R. § 270.42 until:

(i) The permittee has submitted to the Director by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

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(ii) (A) The Director has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or

(B) Within 15 days of the date of submission of the letter in paragraph (l)(2)(i) of this section, the permittee has not received notice from the Director of his or her intent to inspect, prior inspection is waived and the permittee may commence treatment, storage, or disposal of hazardous waste.

c. Monitoring Reports

Monitoring reports shall be reported at the intervals specified in Part II(C). (40 C.F.R. § 270.30(l)(4))

d. Noncompliance with Schedules for Interim and Final Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than fourteen (14) days following each schedule date. (40 C.F.R. § 270.30(1)(5))

e. Twenty-four Hour Reporting

The Permittee shall report to the Regional Administrator any noncompliance which may endanger health or the environment within 24 hours from the time the Permittee becomes aware of the circumstances. The report shall contain the information listed in 40 C.F.R. § 270.30(l)(6).

f. Manifest Discrepancy Report

If a significant discrepancy in a manifest is discovered, the Permittee must attempt to reconcile the discrepancy. If not resolved within fifteen (15) days, the Permittee shall submit a letter report including a copy of the manifest, to the Regional Administrator. (40 C.F.R. § 270.30(1)(7))

g. Unmanifested Waste Report

The Permittee shall submit a report to the Regional Administrator within 15 days of receipt of unmanifested waste. (40 C.F.R. § 270.30(1)(8) and § 40 C.F.R. 264.76)

h. Biennial Report

The Permittee shall submit a biennial report covering Facility activities during odd numbered calendar years. (40 C.F.R. § 270.30(1)(9) and 40 C.F.R. § 264.75)

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i. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports are submitted. The reports shall contain the information listed in 40 C.F.R. § 270.30(1)(6). (40 C.F.R. § 270.30(1)(10))

j. Failure to Submit Relevant and/or Accurate Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, the Permittee shall notify the Regional Administrator of such failure within seven (7) days of becoming aware of such deficiency or inaccuracy. The Permittee shall submit the correct or additional information to the Regional Administrator within fourteen (14) days of becoming aware of the deficiency or inaccuracy (40 C.F.R. § 270.30(1)(11)). Failure to submit the information required in this Permit or misrepresentation of any submitted information is grounds for termination of this Permit. (40 C.F.R. § 270.43)

k. Information Repository

The Director may require the Permittee to establish and maintain an information repository at any time, based on the factors set forth in 40 C.F.R. § 124.33(b). The information repository will be governed by the provision in 40 C.F.R. § § 124.33 (c) through (f).

C. APPROVAL/DISAPPROVAL OF SUBMISSIONS

EPA will review the plans, reports, schedules and other documents (hereinafter collectively referred to as "submissions") submitted by the Permittee which require EPA approval. EPA will notify the Permittee in writing or email of EPA's approval or disapproval of each submission.

Each submission required by this Permit is, upon approval by the Regional Administrator, incorporated into this Permit. Any noncompliance with such EPA-approved submission shall be deemed noncompliance with this Permit.

In the event of EPA disapproval in whole or in part of any submission, EPA shall specify the deficiencies in writing. Such disapproval shall not be subject to the Dispute Resolution provision set forth in permit condition I.D., immediately below, of this Permit. The Permittee shall modify the submission to correct/address the specified deficiencies within a reasonable time period established by EPA taking into account the tasks to be performed,

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and submit the revised submission to EPA for approval. If the revised submission is disapproved, EPA will notify the Permittee of the deficiencies in writing and specify a schedule for the Permittee to correct the deficiencies and resubmit the submission to EPA. The Permittee shall correct the deficiencies as directed by EPA and forward the revised submission to EPA within the time period specified by EPA. In the event the Permittee disagrees with EPA's disapproval of the revised submission the Permittee shall notify EPA in writing and the disagreement shall be resolved in accordance with the Dispute Resolution provision in permit condition I.D. of the Permit.

D. DISPUTE RESOLUTION

Except as otherwise provided in this Permit, in the event the Permittee disagrees, in whole or in part, with EPA disapproval of any submission required by this Permit, the Permittee shall notify EPA in writing of its objections, and the basis therefore, within twenty-one (21) days of receipt of EPA's disapproval.

Such notice shall set forth the specific matters in dispute, the basis for the Permittee's belief that its position is consistent with the permit requirements, and any supporting documentation.

EPA and the Permittee shall have an additional twenty-one (21) days from EPA receipt of the notification to meet or confer to resolve any dispute. In the event agreement is reached, the Permittee shall submit the revised submission and implement the same in accordance with such agreement.

In the event EPA and the Permittee are not able to reach agreement within this twenty-one (21)-day period, the Permittee shall have the opportunity to submit written comments regarding EPA's disapproval, and receive a written decision from the EPA Regional Administrator or his delegate (e.g., the Division Director or the Office Director) regarding the Permittee's objection. EPA will notify the Permittee in writing of its decision and the Permittee shall comply with the terms and conditions of EPA's decision. The Permittee does not waive its right to assert any and all available defenses in a proceeding to enforce this permit, nor does it waive any statutory or regulatory rights it may have, if any, to affirmatively challenge EPA's decision in the dispute.

E. EFFECT OF PERMIT

1. This Permit authorizes only the management of hazardous waste expressly described in this Permit and does not authorize any other management of hazardous waste.

2. Issuance of this Permit does not convey property rights of any sort or any exclusive

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privilege, nor does it authorize any injury to persons or property, or invasion of other private rights, or any infringement of State or local laws or regulations. (40 C.F.R. §§ 270.30(g) and 270.4(b) and (c)). Compliance with this Permit during its term constitutes compliance with Subtitle C of RCRA, except for those requirements not included in the Permit which are described in 40 C.F.R. §§ 270.4(a)(1)(i)-(iv). However, compliance with the terms of this Permit does not constitute a defense to any action brought under Section 7003 of RCRA, 42 U.S.C. § 6973, Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended 42 U.S.C. § 9606(a) (commonly known as Superfund), or any other law governing protection of public health or welfare or the environment.

3. Nothing contained herein shall in any way be deemed to waive the Permittee's obligation to comply with 40 C.F.R. Part 270, Subpart C, and applicable regulations set forth at 40 C.F.R. Part 124.

F. PERMIT MODIFICATION, REVOCATION AND REISSUANCE

1. This Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay any permit condition. (40 C.F.R. § 270.30(f)). Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations and laws. (RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3))

2. The Regional Administrator will modify the Permit in accordance with 40 C.F.R. § 270.41 and Section 3005(c) of RCRA in the event that investigations required in this Permit, or any other information available to the Regional Administrator, identify solid waste management units (SWMUs) that require corrective measures. The modified permit will include assurances of financial responsibility for completing such corrective action. (40 C.F.R. § 264.101(b)). This paragraph does not limit the Regional Administrator's authority to otherwise modify this Permit in accordance with 40 C.F.R. Part 270, Subpart D.

3. This Permit may be modified if the Regional Administrator determines good cause exists for modification as set forth in 40 C.F.R. § 270.41.

G. PERMIT EXPIRATION AND CONTINUANCE

1. Pursuant to 40 C.F.R. § 270.50, this Permit shall be effective for a fixed term not to exceed ten years. Pursuant to 40 C.F.R. § 270.51, this Permit and all conditions

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herein will remain in effect beyond the Permit's expiration date if the Permittee has submitted a timely and complete application for a new permit (see 40 C.F.R. §§ 270.10 and 270.13 - 270.29) and, through no fault of the Permittee, the Regional Administrator has not issued a new permit under 40 C.F.R. § 124.15 on or before the expiration date of this Permit. In addition, each permit for a land disposal facility shall be reviewed by the Regional Administrator five years after the date of permit issuance or reissuance and shall be modified as necessary, as provided in 40 C.F.R.§ 270.41. (40 C.F.R. § 270.50(d))

2. If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must submit a complete application for a new permit at least 180 days before this Permit expires, unless permission for a later date has been granted by the Regional Administrator. (40 C.F.R. §§ 270.10(h) and 270.30(b))

3. The corrective action obligations contained in this Permit shall continue regardless of whether the Permittee continues to operate or ceases operation and closes the Facility. The Permittee is obligated to complete Facility-wide corrective action under the conditions of a RCRA permit regardless of the operational status of the Facility. The Permittee must submit an application for a new permit at least 180 days before this permit expires pursuant to 40 C.F.R. § 270.10(h), unless the permit has been modified to terminate the corrective action schedule of compliance and the Permittee has been released from the requirements for financial assurance for corrective action.

H. TRANSFER OF PERMIT

1. This Permit is not transferable to any person, except after notice to the Regional Administrator. (40 C.F.R. § 270.30(1)(3)). The Permit may be transferred by the Permittee to a new owner or operator only if the Permit has been modified or revoked and reissued under 40 C.F.R. § 270.40(b) and 270.42(a) to identify the new Permittee and incorporate such other requirements as may be necessary under the appropriate Act. (40 C.F.R. § 270.40). The Regional Administrator may require modification or revocation and reissuance of the Permit to change the name of the Permittee and incorporate such other requirements as may be necessary under RCRA. (40 C.F.R. § 270.30(l)(3))

2. Before transferring ownership or operation of the Facility during its operating life, the Permittee transferring its interest in the Facility shall notify the new owner or operator in writing of the requirements of 40 C.F.R. Parts 264 and 270. (40 C.F.R. § 264.12(c))

I. SEVERABILITY

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The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. (40 C.F.R. § 124.16(a)(2))

PART II – SPECIFIC FACILITY CONDITIONS

A. CORRECTIVE ACTION FOR CONTINUING RELEASES; PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

1. Section 3004(u) of RCRA, 42 U.S.C. § 6924(u), and regulations codified at 40 C.F.R. § 264.101, provide that all permits issued after November 8, 1984 must require corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU), regardless of when waste was placed in the unit.

2. Under Section 3004(v) of RCRA, 42 U.S.C. § 6924(v), and 40 C.F.R. § 264.101(c), EPA may require that corrective action at a permitted facility be taken beyond the facility boundary where necessary to protect human health and the environment, unless the owner or operator of the facility concerned demonstrates to the satisfaction of EPA that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action.

3. Section 3005(c)(3) of RCRA, 42 U.S.C. § 6925(c)(3), and 40 C.F.R. § 270.32(b) provide that each permit shall contain such terms and conditions as EPA determines necessary to protect human health and the environment.

B. REMEDY IMPLEMENTATION

This Permit requires the implementation and maintenance of the Final Remedy for the Facility as selected by and described in the Final Decision and Response to Comments (FDRTC) issued by EPA on April 14, 2011. The FDRTC is attached hereto as Attachment A and is incorporated into this Permit and made a part hereof. Subject to EPA review and approval, FMC may be required to implement such additional remedial actions in addition to the below, at identified source areas at the Site. The Environmental Covenants, Corrective Measures Implementation Report and all Plans referenced in Section B are incorporated into this Permit and made a part hereof and are enforceable under this Permit.

1. Groundwater

   a. As of the Effective Date of this Permit and thereafter, the Permittee shall operate and maintain the Groundwater Recovery System at the Facility until drinking water

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standards established by the Maximum Contaminant Levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1 or the Risk Screening Level for a contaminant if no MCL for that contaminant exists, are restored.

b. As of the Effective Date of this Permit and thereafter, the Permittee shall continue to implement the revised Ground Water Monitoring Plan dated March 2021 for the Main Parcel (ERM, 2021) and the Ground Water Monitoring Plan for the North Parcel and Main Parcel (ERM, 2022). These Ground Water Monitoring Plans are attached hereto as Attachments B and C.

c. As of the Effective Date of this Permit and thereafter, the Permittee shall continue to implement the Corrective Measures Implementation Report for Groundwater Recovery Optimization (ERM, 2019). The Corrective Measures Implementation Report is attached hereto as Attachment D.

2. Soils

a. As of the Effective Date of this Permit and thereafter, Permittee shall comply with the Soil Management Plan (ERM, August 7, 2020) for all earth moving activities, including construction and drilling, on Facility property. The Soil Management Plan is attached hereto as Attachment E.

b. As of the Effective Date of this Permit and thereafter, Permittee shall comply with the Corrective Measures Implementation Work Plan for the North Parcel (ERM, 19 October 2016) for the construction of a cover on the northern portion of the North Parcel, referred to as Block 7335D Lot 007, in conjunction with redevelopment. The Corrective Measures Implementation Work Plan for the North Parcel is attached hereto as Attachment F.

3. Soil Vapor

a. As of the Effective Date of this Permit and thereafter, Permittee shall comply with the Vapor Control Plan as detailed in the Corrective Measures Implementation Work Plan (August 7, 2020). The Corrective Measures Implementation Work Plan is attached hereto as Attachment G.

b. As of the Effective Date of this Permit and thereafter, Permittee shall comply with the Corrective Measures Implementation Work Plan for the North Parcel (ERM, 19 October 2016) for the installation of soil vapor intrusion control systems. The Corrective Measures Implementation Work Plan for the North Parcel is attached hereto as Attachment F.

4. Institutional Controls

a. As of the Effective Date of this Permit and thereafter, Permittee shall comply with

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the 3 separate Environmental Covenants for the Main Parcel (Block 7335D Lot 008) and North Parcel (Block 7335D Lots 001 and 007). The 3 Environmental Covenants are attached hereto as Attachment H and are incorporated into this Permit and made a part hereof and shall be enforceable under this Permit.

b. Permittee must use best efforts to implement off-site use controls described in the Off-Site Use Control Plan (ERM, July 2021), including completing the draft Environmental Covenants for the Dana and Fleet Properties. The Off-Site Use Control Plan is attached hereto as Attachment I.

C. EVALUATION OF THE SELECTED REMEDY

Commencing one year from the Effective Date of this Permit and continuing thereafter, the Permittee shall submit an annual progress report on the corrective measure(s) remedy performance and continue to submit annual groundwater monitoring and remedial measures reports until remediation cleanup standards have been met. If EPA determines that the selected remedy will not comply with the remediation cleanup standards, EPA may require the Permittee to perform additional studies and/or perform modifications to the existing Corrective Action remedy. If necessary, EPA or the Permittee may seek modification of this Permit pursuant to 40 CFR § 270.41 or § 270.42 and § 124.5 to implement modifications to the existing Final Remedy.

D. OTHER APPLICABLE LAWS

Nothing in this Permit shall limit EPA's authority to undertake or require any person to undertake response action or corrective action under any law, including but not limited to, Sections 104 or 106 of CERCLA, 42 USC § 9604 or 9606, and Section 7003 of RCRA, 42 USC § 6973. Nothing in this Permit shall relieve the Permittee of any obligation it may have under any law, including, but not limited to, Section 103 of CERCLA, to report releases of hazardous waste, hazardous constituents or hazardous substances to, at or from the Facility.

E. GUIDANCE DOCUMENTS

All corrective action performed at the Facility shall be developed and performed, as appropriate and approved by EPA, in accordance with: the Scope of Work for Interim Measure(s); the Scope of Work for a RCRA Facility Investigation; the Scope of Work for a Corrective Measures Study; the Scope of Work for Corrective Measures Implementation (IM Scope of Work), the Scope of Work for Health and Safety Plan; and RCRA, its implementing regulations and relevant EPA guidance documents. EPA's Scopes of Work and relevant guidance are available at:

https://www.epa.gov/hw/learn-about-corrective-action

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F. INTERIM MEASURES

1. In the event Permittee identifies a newly discovered solid waste management unit (SWMU) or new releases of hazardous waste and/or hazardous constituents at or from the Facility not previously identified, or discovers an immediate or potential threat to human health and/or the environment at the Facility, Permittee shall notify the EPA Project Coordinator orally within forty-eight (48) hours of discovery and notify EPA in writing within three (3) calendar days of such discovery summarizing the potential for the migration or release of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility and the immediacy and magnitude of the potential threat(s) to human health and/or the environment, as applicable. Upon written request of EPA, Permittee shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work that identifies interim measures which will mitigate the migration or release of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility and mitigate any threat to human health and/or the environment. If EPA determines that immediate action is required, the EPA Project Coordinator may orally authorize Permittee to act prior to EPA's receipt of the IM Workplan.

2. If EPA identifies a newly discovered SWMU or new releases of hazardous waste and/or hazardous constituents at or from the Facility not previously identified, or discovers an immediate or potential threat to human health and/or the environment at the Facility, EPA will notify Permittee in writing. Within ten (10) days of receiving EPA's written notification, Permittee shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work, that identifies interim measures which will mitigate the migration or release of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility and mitigate any threat to human health and/or the environment. If EPA determines that immediate action is required, the EPA Project Coordinator may orally require Permittee to act prior to Permittee's receipt of EPA's written notification.

3. All IM Workplans shall ensure that the interim measures are designed to mitigate the migration or release of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility and mitigate any immediate or potential threat(s) to human health and/or the environment, and should be consistent with the objectives of, and contribute to the performance of any long-term remedy which may be required at the Facility.

4. Each IM Workplan shall include the following sections as appropriate and approved by EPA: Interim Measures Objectives, Public Involvement Plan, Data Collection Quality Assurance, Data Management, Design Plans and Specifications, Operation and Maintenance, Project Schedule, Interim Measures Construction Quality Assurance, and Reporting Requirements.

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5. Concurrent with submission of an IM Workplan, Permitee shall submit to EPA an IM Health and Safety Plan.

G. FINANCIAL ASSURANCE

1. Within ninety (90) days after the Effective Date of this Permit, Permittee shall submit to EPA for approval detailed written estimates, in net present value (NPV) for the term of this permit, of the cost of hiring a third party to perform the work required under Part II "Remedy Implementation" (Cost Estimate). The Cost Estimate must account for the costs of all foreseeable work, including all investigations and reports, construction work, monitoring, and other long term care work, etc. All Cost Estimates shall be consistent with the requirements of 40 C.F.R. § 264.142 and § 264.144. References in these regulations to closure and post-closure shall mean the corrective actions performed under Part II of this Permit.

2. Permittee shall annually adjust the Cost Estimate for inflation and for changes in the corrective actions required under Part II "Remedy Implementation" until such corrective actions are completed. By January 31st of each year, Permittee shall submit each annual Cost Estimate to EPA for review.

3. By March 31st of each year, the Permittee shall demonstrate compliance with financial assurance to EPA in accordance with 40 C.F.R. § 264.143 for completing the Final Remedy in accordance with 40 C.F.R. § 264.101(b). Within thirty (30) calendar days of approval of any revised cost estimate, the Permittee shall demonstrate to EPA financial assurance for the updated cost estimates.

4. Permittee's inability or failure to establish or maintain financial assurance for completion of the Final Remedy shall in no way excuse performance of any other requirements of this Permit.

H. RECORDKEEPING

Upon completion of closure of any current or future SWMU, the Permittee shall maintain in the Facility operating record, documentation of the closure measures taken.

I. ACCESS FOR CORRECTIVE ACTION OVERSIGHT

The EPA and its authorized representatives shall have access to the Facility at all reasonable times for the purpose of monitoring compliance with the provisions of this Permit. The Permittee shall use its best efforts to obtain access to property beyond the boundaries of the Facility at which corrective action is required by this Permit (see Section 3004(v) of RCRA, 42 U.S.C. § 6924(v) and 40 C.F.R. § 264.101(c)); (1) for itself and any

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contractor of the Permittee for the purpose of taking corrective action required by this Permit, and (2) for EPA and its authorized representatives for the purposes described in this paragraph.

J. LIST OF ATTACHMENTS

The following Attachments are incorporated, in their entirety, by reference into this Permit. These incorporated attachments contain enforceable conditions of this Permit.

Attachment A: Final Decision and Response to Comments (USEPA, 2011)
Attachment B: Appendix C Ground Water Monitoring Plan for the Main Parcel (ERM, March 2021)
Attachment C: Appendix D Ground Water Monitoring Plan for the North Parcel (ERM, 25 July 2022)
Attachment D: Corrective Measures Implementation Report for Groundwater Recovery Optimization (ERM, 2019)
Attachment E: Soil Management Plan (ERM, August 7, 2020)
Attachment F: North Parcel Corrective Measures Implementation Work Plan (ERM, 2016)
Attachment G: Corrective Measures Implementation Work Plan (ERM, August 7, 2020)
Attachment H: Three separate Environmental Covenants for the Main Parcel (Block 7335D Lot 008) and North Parcel (Block 7335D Lots 001 and 007)
Attachment I: Corrective Measures Implementation Work Plan for the North Parcel Appendix E Off-Site Use Control Plan (ERM, July 2021)

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Date Signed

Stacie Driscoll, Acting Director
Land, Chemicals and Redevelopment Division
EPA Region III

REC'D BY FMC

APR 25 2011

ENVIRONMENTAL GROUP

ATTACHMENT A

Public Comments and EPA Responses

The comments received from FMC Corporation and EPA's Responses are set forth below:

1. Comment No. 1 - Page 4, Section IV.A.1 Restoration of Groundwater to Drinking Water Standards.

EPA proposes to require that FMC expand the existing Groundwater Recovery System by installing additional ground water recovery and monitoring wells, as an initial step towards restoration of ground water to drinking water standards. EPA states that the data from the October/November 2008 comprehensive site-wide ground water sampling event will be used as a baseline to approve the locations and number of additional wells.

FMC proposes that the findings from the proposed Comprehensive Groundwater Recovery and Treatment Study (Comprehensive Study), as described in Section IV.A.2 of the Statement of Basis (i.e., sediment and pore water sampling and the three years of ground water monitoring) be used to determine whether the existing recovery system needs to be expanded. Therefore, FMC requests that in the FDRTC document expansion of the recovery system be linked to the findings from the Comprehensive Study, rather than defaulting to an initial expansion of the recovery system based on limited available information, and then potentially reconfiguring the system again after the Comprehensive Study is completed in three years. Additionally, the results of the Comprehensive Study should be included in a Corrective Measures Study (CMS), and the CMS process should be used to determine the scope of the final remedy (i.e., alternative corrective measures evaluated against EPA's effectiveness criteria).

EPA Response to Comment No. 1

EPA agrees with this comment. The data from the Comprehensive Study should be used to evaluate the effectiveness of the existing Groundwater Recovery System and to determine whether additional recovery wells should be installed. Therefore, EPA has incorporated language into the Final Decision to state that after the completion of the Comprehensive Study, which consists of groundwater sampling and sediment and pore water sampling, EPA will evaluate whether additional recovery wells are necessary. EPA has also modified the length of the groundwater sampling to be conducted as part of the Comprehensive Study from three years to two years.

2. Comment No. 2 - Page 4, Section IV.A.1 Restoration of Groundwater to Drinking Water Standards.

The Statement of Basis states that based on the ongoing investigation of the North Parcel, EPA will determine the location and number of additional recovery wells necessary to capture the contaminated ground water plume under the North Parcel.

FMC requests that the FDRTC include flexibility to address the North Parcel contamination using applicable remedial technologies identified in an EPA approved FMC 10/11/2010 CMS. In accordance with the September 2009 EPA-approved document titled Sampling and Analysis Plan for the Ground Water Investigation on the North Parcel, FMC is evaluating the feasibility of using in-situ remedial approaches to address the soil and ground water impacts on the North Parcel. The option of capturing ground water and managing this water in the existing recovery system or in a separate recovery system can be evaluated in a CMS for the North Parcel. In any event, FMC is not waiting until the results of the Comprehensive Study are available after three years for development and evaluation of proposed remedial actions for the North Parcel, as implied in Section V.3, fourth sentence of the Statement of Basis. Instead, FMC will move forward with a field pilot test of one of the in-situ remedial approaches in 2011 based on the results of the treatability testing.

EPA Response to Comment No. 2

EPA agrees with this comment and has incorporated language into Section IV. "Final Remedy" of the FDRTC to provide FMC flexibility in investigating the North Parcel. FMC may implement additional corrective measures, such as in-situ chemical and/or biological treatments of source areas, subject to EPA approval, at any time. Once any such corrective measures are implemented, additional sampling will be required to evaluate the effectiveness of those measures.

3. Comment No. 3 - Page 5, Section IV.A.1 Restoration of Groundwater to Drinking Water Standards, 2) Sediment and Pore Water Sampling

The Statement of Basis states that FMC will develop and conduct sediment and pore water sampling relative to the potential impacts of Facility-related contaminated ground water on Stonehouse Cove and Curtis Bay in accordance with an EPA and MDE-approved "Comprehensive Sediment and Pore Water Sampling and Analyses Plan."

On 27 September 2010, FMC submitted to EPA the document titled Pore Water Sampling and Analysis Plan (Pore Water SAP). The Pore Water SAP describes FMC's proposed study of pore water in Stonehouse Cove and Curtis Bay adjacent to the western and southern boundaries of the Site, and is consistent with the approach discussed with EPA at a meeting on April 28, 2010. That approach provides for the collection of pore water samples and analysis of the samples for chlorobenzene as an indicator of ground water impacts, and does not prescribe the collection of sediment samples. Sediment will

only be investigated in a separate phase if determined by EPA to be necessary by the pore water results. FMC requests that the FDRTC include flexibility to implement this iterative approach that was discussed at the April 28 meeting.

EPA Response to Comment No. 3

EPA agrees with this comment and has incorporated language in Section IV. "Final Remedy" of the FDRTC to clarify that the analytical results of the pore water sampling will be used to determine whether sediment sampling is necessary.

4. Comment No. 4 - Page 6, Section IV.B Soil Management Strategy

Table 2 lists PCBs and Organochlorine pesticides (EPA Method 8081B) as chemicals to be included in the soil analysis in the Soil Management Plan (SMP).

First, FMC submitted to EPA a Soil Management Plan (SMP) on July 21, 2010 and EPA approved the SMP in a letter dated September 27, 2010. Although this SMP particularly deals with the 20-acre portion of the Site that Energy Answers will be leasing and redeveloping, it is intended to apply to future development across the Site. Second, the SMP does not include or propose analyses of soils for PCBs or organochlorine pesticides (EPA Method 8081B). These compounds were determined to not be present or not manufactured at the Site (this scan includes Aldrin, BHC, Chlordane, DDD, DDE, DDT, Dieldrin, Endosulfan, Endrin, Heptachlor, Kepone, Methoxychlor, and Toxaphene). Therefore, FMC requests that the FDRTC reflect the approach in the EPA-approved SMP and not include these compounds as part of the soil management strategy.

EPA Response to Comment No. 4

EPA agrees with this comment. PCBs and organochlorine pesticides are not Contaminants of Concern at the Facility. Therefore, EPA has removed those contaminants from Table 1: "Contaminants of Concern" in the Final Decision.

5. Comment No. 5 - Page 6, Section IV.B Soil Management Strategy

The Statement of Basis states that the SMP will also detail soil characterization and/or capping requirements for areas of undisturbed, but potentially contaminated soils, as well as areas that are currently covered with gravel, and that it "will include soil stabilization requirements to minimize contact between storm water runoff and the Site soils."

These items/requirements regarding capping of areas of undisturbed soils should be part of the selected final remedy and addressed in the Corrective Measures Implementation (CMI) Plan (in preparation), not the SMP. FMC did not include such items in the SMP for the 20-acre redevelopment parcel that was submitted to EPA on July 21, 2010 and approved by EPA on September 27, 2010. Additionally, the EPA approved SMP does not include soil characterization in undisturbed areas. FMC requests

that the FDRTC reflect the approach for addressing undisturbed soils described in the SMP and CMI Plan.

EPA Response to Comment No. 5

EPA agrees with this comment. Final capping and various surface water runoff controls should be addressed in the CMI Plan for the entire Facility. EPA has added language to Section IV. "Final Remedy" of the FDRTC to address this comment.

6. Comment No. 6 - Page 6, Section IV.C Installation of Vapor Mitigation Systems

The Statement of Basis states that EPA is waiting for the results of the soil gas survey and will use the results to determine the vapor controls necessary to eliminate the potential for vapor intrusion.

FMC requests that the FDRTC reflect the specific vapor controls to address vapor intrusion described in the CMS report (dated April 27, 2010) submitted for the Energy Answers Redevelopment Parcel (but also intended to be applicable to other development activities on the remainder of the Site) and approved by EPA in a letter dated June 7, 2010.

EPA Response to Comment No. 6

EPA agrees with this comment and has incorporated language in the FDRTC to reflect the fact that EPA has reviewed and approved the Vapor Control Plan as detailed in FMC's April 2010 Corrective Measures Study Report for the Redevelopment Parcel.

7. Comment No. 7 - Page 8, Section V.1 Protection of Human Heath and the Environment

The Statement of Basis states that FMC will operate the expanded Groundwater Recovery system until ground water is restored to drinking water standards.

FMC requests that the FDRTC allow for the evaluation of additional corrective measures to achieve this remedial objective through the CMS process.

EPA Response to Comment No. 7

EPA agrees with this comment. FMC is encouraged to identify and implement remedial actions that may accelerate groundwater remediation. However, until groundwater is restored to drinking water standards, FMC will be required to operate the Groundwater Recovery System to prevent the off-site migration of contaminated groundwater.

8. Comment No. 8 - Page 9, Section V.3 Remediating Sources of Releases

The Statement of Basis states that as part of the Comprehensive Study, FMC will identify source areas and propose various remedies to address those source areas.

This reference to the scope of the Comprehensive Study is inconsistent with the

description provided in Section IV.A.2. The identification of possible source areas and the identification and evaluation of corrective measures alternatives for such areas should be undertaken through a RCRA Facility Investigation, or supplemental investigation, and a CMS. FMC requests that the FDRTC include provisions for such an investigation and for the evaluation of corrective measures in a CMS depending on the findings of the investigation.

EPA Response to Comment No. 8

EPA agrees with this comment. EPA has incorporated language into Section V. "Final Remedy" of the FDRTC to allow for additional investigation of the North Parcel. The FDRTC also allows for the application of in-situ treatment at identified source areas anytime that FMC concludes that it would accelerate the remediation process. A separate CMS will not be necessary for these activities. FMC must notify EPA before undertaking such activities.

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

FINAL DECISION AND RESPONSE TO COMMENTS

FMC Corporation

Baltimore, Maryland

EPA ID NO. MDD0030781875

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I. Introduction

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC or Final Decision) in connection with the FMC Facility located at 1701 East Potapsco Avenue, Baltimore, Maryland (Facility or Site).

The Facility is subject to the Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 11984, 42 U.S.C. Sections 6901 et seq. The Corrective Action program is designed to ensure that certain facilities subject to RCRA have investigated and addressed releases of hazardous waste and hazardous constituents that have occurred at their property.

On September 9, 2010, EPA issued a Statement of Basis (SB) in which EPA proposed the remedy for the Facility. EPA held a thirty (30)-day public comment period which began on September 9, 2010, and ended on October 11, 2010. All of the comments received by EPA during the public comment period were carefully reviewed by EPA, and EPA's responses are set forth in Attachment A, Public Comments and EPA Responses.

Based on comments received during the public comment period, EPA has determined that it is not necessary to make significant modifications to the proposed remedy as set forth in the SB. EPA is, however, making minor modifications to and clarifying certain aspects of the proposed remedy as described in more detail in Attachment A, Public Comments and EPA Responses. This Final Decision incorporates those minor modifications and clarifications.

II. Facility Background

The Facility is owned by FMC Corporation (FMC). It is located on approximately 90 acres in Baltimore, Maryland and is bordered by Curtis Bay to the south, by Stonehouse Cove to the west and by both industrial and commercial properties to the north and east.

U.S. Industrial Chemicals Inc. began manufacturing ethanol and acetone at the Facility in 1915. In 1954, FMC purchased the Facility from U.S. Industrial Chemicals Inc. From 1954 until May 2008, FMC manufactured pesticides and herbicides at the Facility. Throughout the Facility's history, a number of chemical waste residuals were managed and/or disposed of at several locations at the Facility.

In May 2008, FMC stopped its manufacturing operations at the Facility and began dismantling the plant. The Facility is no longer operating and approximately 90 percent of the manufacturing buildings and equipment has been dismantled. Seven buildings remain for possible future use. FMC remains the owner of the Facility.

III. Summary of Environmental History

In January 1986, the Maryland Department of Health and Mental Hygiene Waste Management Administration (DWMA), which subsequently changed its name to the Maryland Department of the Environment (MDE), entered into an Administrative Consent Order, CO-85-498, (Consent Order) with FMC. Pursuant to the Consent Order, FMC submitted to DWMA for review and approval a Groundwater Report. The Groundwater Report summarized groundwater studies conducted by FMC at the Facility from 1981 to 1985.

On December 13, 1989, EPA issued a RCRA Corrective Action Permit, EPA ID No. MDD003071875 (Permit), under RCRA Section 3004(u), 42 U.S.C. Section 6924(u), to FMC for the Facility. The Permit, which on its terms expired on December 13, 1999, has been administratively extended. The Permit requires, among other things, FMC to characterize the extent of groundwater contamination at the Facility and evaluate remedy options.

Based on EPA-approved groundwater characterization reports, EPA has identified the following Contaminants of Concern (COCs) in Facility groundwater:

Table 1: Contaminants of Concern

Volatile Organic Compounds (VOCs)	Semi-Volatile Organic Compounds (SVOCs)
Benzene	1,2,4-Trichlorobenzene
Bromoform	1,2-Dichlorobenzene
Chlorobenzene	1,3-Dichlorbenzene
Chloroethane	1,4-Dichlorobenzene
Choloform	2,4,6-Trichorophenol
Cis-1,3-Dichloropropene	2,4-Dinitrophenol
Ethylbenzene	2-Chlorophenol
Methylene Chloride	2-Methylphenol
Trans-1,3-Dichloropropene	2-Nitrophenol
Trichlorofluoromethane	4-Choloro-3-methylphenol
	Aniline
	Bis(2-cholroethoxy)methane
	Bis(2-chloroisopropyl)ether
	Bis(2-ethylhexyl)phthalate
	Butyl benzyl phthalate
	Chrysene
	Diethylphthalate
	Di-n-butylphthalate
	Pentachlorophenol
	Phenol

In September 1993, EPA approved a Supplemental Groundwater Characterization Report (Supplemental Report) submitted by FMC pursuant to the Permit. The Supplemental Report provided additional information necessary to characterize the groundwater conditions at the Facility and to assess any potential biological impacts to Curtis Bay. Three subsurface units were identified: surface fill; the Pleistocene Formation; and the Patapsco Formation. Shallow groundwater generally flows from north to south across the Facility, and becomes radial as it approaches Stonehouse Cove and Curtis Bay. Groundwater flow in the Patapsco Aquifer is to the southeast, consistent with the regional dip of the Patapsco Formation. Based on the results from aquifer performance tests which were completed as part of the Supplemental Report, groundwater collection appeared to be a viable remedial option.

In August 1994, EPA approved a Contaminant Characterization Report which described the nature and extent of contamination at the Facility and presented corrective measures for the biologic impacts to Curtis Bay associated with the discharge of contaminated groundwater from

the Facility. In August 1995, EPA conditionally approved a Corrective Measures Plan in which FMC identified groundwater recovery and treatment as the preferred remedial alternative for the Facility. In May 1996, EPA approved the Final Basis of Design for RCRA Corrective Measures/Stabilization which provided the design details for a groundwater recovery and treatment system (Groundwater Recovery System). In May 1997, pursuant to the interim measures provisions of the Permit, FMC installed the Groundwater Recovery System. At the request of EPA, FMC installed an additional recovery well in the Upper Patapsco in November 2005. Currently, FMC is operating the Groundwater Recovery System and is conducting groundwater monitoring at the Facility under the interim measures provisions of the Permit.

In November 1999 and, again in April 2003, the U.S. Army Corps of Engineers (Corps), on behalf of EPA, conducted Visualization of Groundwater Contamination studies to evaluate the effectiveness of the Groundwater Recovery System. Bioassay studies were also conducted at the Facility in 1985, 1992, 1999, and 2006, respectively, to evaluate the toxicity of groundwater discharging from the Site to aquatic organisms in Stonehouse Cove and Curtis Bay. Based on the findings of the various studies, EPA has determined that not all Facility-related contaminants are being captured by the Groundwater Recovery System.

In October and November 2008, FMC conducted Site-wide groundwater sampling. The sampling data revealed a source area(s) in the northern 23 acres at the Facility which is referred to as the North Parcel. Groundwater and soils at the North Parcel contain volatile organic compounds (VOCs) in concentrations above their respective Maximum Contaminant Levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1, or Region III's Risk Based Concentrations (RBCs), if no MCL exists. Pursuant to the interim measures provisions in the Permit, FMC is currently investigating and delineating the plume and characterizing the soils at the North Parcel. FMC will be required to implement additional remedial actions at the North Parcel.

IV. EPA's Remedy for the Facility

EPA's Remedy for the Facility is summarized below. EPA will require FMC to implement the Remedy through the issuance of a Permit Modification.

A. Groundwater Remediation Strategy

EPA's corrective action goals for Facility groundwater are 1) to restore groundwater to drinking water standards established by the MCLs or RBCs, if there are no MCLs, and 2) to control Site-related groundwater contamination from entering Stonehouse Cove, Curtis Bay, and site-adjacent properties. In addition, FMC is required to conduct a Comprehensive Groundwater Recovery and Treatment Study (Comprehensive Study), described in more detail below. FMC has submitted to EPA for approval a Comprehensive Sediment and Pore Water Sampling and Analyses Plan (Sediment and Pore Water Plan) to measure the impacts of Facility-related contaminated groundwater on Stonehouse Cove and Curtis Bay. The results of the EPA-approved Sediment and Pore Water Plan will be used in the Comprehensive Study.

1. **Restoration of Groundwater to Drinking Water Standards**

FMC will be required to operate and, as necessary, to expand the Groundwater Recovery System until drinking water standards established by the MCLs or RBCs, if no MCLs exist, are restored. Once the Comprehensive Study is completed and all data are evaluated, FMC will evaluate the existing Groundwater Recovery System and make improvements, as required by EPA. In order to accelerate the groundwater restoration process, FMC will evaluate additional remedial actions such as chemical and biological treatment at identified source areas in soils and/or groundwater, including but not limited to the North Parcel. Subject to EPA review and approval, FMC may be required to implement such additional remedial actions at identified source areas at the Site.

2. **Control Contamination From Entering Stonehouse Cove and/or Curtis Bay or Site-adjacent Properties.**

As part of the Remedy, FMC will be required to conduct a Comprehensive Study to evaluate the short-term and long-term effectiveness of the Groundwater Recovery System in controlling site-related groundwater contamination from entering Stonehouse Cove, Curtis Bay, and site-adjacent properties. If the results of the Comprehensive Study show that groundwater is not being effectively controlled and Site-related contamination continues to enter Stonehouse Cove, Curtis Bay, and/or site-adjacent properties at unacceptable concentrations, EPA will require FMC to improve the Groundwater Recovery System. Additional remedial improvements may include the use of chemical and/or bio-remediation technologies at identified source areas, including but not limited to the North Parcel, and/or the construction of a physical barrier to contain contaminated groundwater.

The Comprehensive Study shall include the following components:

a. Two years of semi-annual groundwater sampling

FMC shall conduct two years of semi-annual groundwater sampling. The parameters to be analyzed will be the 10 VOCs and 20 SVOCs identified in Table 1: "Contaminants of Concern," above, that are currently required to be sampled annually under the Permit and any compound whose concentration was equal to or exceeded its respective EPA Screening Level during the Site-wide groundwater sampling program implemented in the fall of 2008.

b. Sediment and Pore Water Sampling

FMC has submitted for EPA approval a Sediment and Pore Water Sampling Plan. Upon EPA approval, EPA will require FMC to implement the approved Sediment and Pore Water Sampling Plan. The sampling data will be used to measure the impacts of Facility-related contaminated groundwater on Stonehouse Cove and Curtis Bay. Implementation of the Sediment and Pore Water Sampling Plan may be conducted in an iterative approach with the initial sampling and analysis of pore water. Based on the analytical results of the pore water sampling, EPA will determine if sediment sampling and analysis will be necessary. Further, based on the results of the pore water sampling and, if necessary, the sediment sampling, EPA will determine if benthic studies will be necessary.

Once the results of the semi-annual groundwater sampling and Sediment and Pore Water sampling are evaluated, EPA will determine whether the installation of additional recovery wells is necessary.

B. Soil Management Strategy

FMC has developed a Soil Management Plan that has been approved by EPA and MDE and will be implemented during earth moving activities, including construction and drilling on Facility property. The Soil Management Plan details how all excavated soils will be handled and disposed. All excavated soils will be analyzed for the following groups of chemicals by the following methods:

Table 2: Analytical Methods

Chemicals	Method
VOCs	EPA Method 8260B
SVOCs	EPA Method 8270D
EPA Contract Laboratory Program Target Analyte List for Metals and Cyanide, except for calcium, magnesium, potassium and sodium. (The list can be found at: http://www.epa.gov/superfund/programs/clp/ismtarget.htm)	EPA Contract Laboratory Program Method

Soil remediation cleanup standards will be determined by EPA and MDE using EPA Region III's Risk-Based Concentrations (RBCs) for industrial screening levels. In addition, any excavated soils that are stockpiled will be sampled and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) and will be disposed off-site as necessary.

With respect to soils that remain undisturbed at the Facility, such soils will be capped and surface water runoff controls will be implemented. The capping of undisturbed soils and the implementation of surface water runoff controls will be included in a Facility-wide Corrective Measures Implementation Plan.

C. Installation of Vapor Mitigation Systems

Buildings located above a contaminated groundwater plume are vulnerable to subsurface vapor intrusion coming from the plume and entering through cracks, joints and utilities openings. Therefore, to address potential vapor intrusion, as part of the Remedy, EPA will require that vapor control systems be installed in all existing buildings and each newly constructed building

in accordance with the EPA-approved Vapor Control Plan as detailed in FMC's April 2010 Corrective Measures Study Report for the Redevelopment Parcel.

D. Implementation of Institutional Controls

EPA's Remedy requires that institutional controls be implemented in order to prevent any activities which would interfere with or adversely affect the integrity and protectiveness of the Remedy. The institutional controls are necessary to ensure that (1) contaminated groundwater is not used for potable purposes or any other use that could result in human exposure until cleanup levels are achieved; (2) the integrity and protectiveness of the Groundwater Recovery System is maintained; (3) the Facility is not used for residential purposes, (4) subsequent purchasers of the Facility property are informed of the environmental conditions at the Facility and of EPA's Remedy for the Facility and (5) exposure to vapor intrusion and contaminated soils is limited.

Institutional controls will include, but may not be limited to, an environmental covenant to be entered pursuant to the Maryland Uniform Environmental Covenants Act, Maryland Environment Code, Sections 1-801 to 1-815 (UECA) and to be recorded with the deed for the Facility property. The Environmental Covenant will be required to include the following:

i. a restriction on the use of groundwater beneath the Facility for potable purposes or any other use that could result in human exposure until cleanup levels are achieved, unless such use is required by the Remedy,
ii. a restriction on well drilling at the Facility without prior EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse affects to the Remedy,
iii. a restriction that the Facility not be used for any purpose other than industrial unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;
iv. a requirement that any earth moving activities by any entity on Facility property, including construction and drilling, be done in accordance with the EPA-approved Soil Management Plan, and
v. a requirement that a vapor control system, the design of which shall be approved in advance by EPA, is installed in any existing and all new structures constructed at the Facility.

V. Evaluation of EPA's Remedy

This section provides a description of the criteria EPA uses to evaluate remedies under the Corrective Action Program. The criteria are applied in two phases. In the first phase, EPA evaluates three criteria, known as Threshold Criteria. In the second phase, EPA uses seven balancing criteria to select among alternative solutions, if more than one solution is proposed. The Facility has demonstrated that the current conditions meet the threshold criteria established

by EPA and because EPA is not selecting among alternatives, an evaluation of the balancing criteria is not necessary.

The following is a summary of EPA's evaluation of the Threshold Criteria:

1. Protect Human Health and the Environment

The components of the Remedy described in Section IV protect human health and the environment from exposure to contamination in groundwater and soils for current and anticipated land use.

There are no current known human health threats associated with domestic uses of the contaminated groundwater originating from the Facility because groundwater is not currently used for potable purposes. The properties in the vicinity of the Facility are serviced by public water from a source not affected by Facility related contamination and there are no private wells located in the area.

FMC will be operating the Groundwater Recovery System (with additional recovery wells if necessary) until groundwater is restored to drinking water standards. Until those standards are met, EPA is requiring institutional controls, as necessary, to restrict use of groundwater beneath the Facility for potable purposes or any other use that could result in human exposure. EPA's Remedy also requires the implementation of institutional controls to prevent any activities which would interfere with or adversely affect the integrity or effectiveness of the remedial actions performed at the Facility.

A primary concern associated with the contaminated groundwater under current conditions is the discharge of site-related contamination into the Stonehouse Cove and Curtis Bay. If EPA determines that the groundwater is not being effectively controlled and site-related contamination in excess of acceptable concentrations continues to enter Stonehouse Cove and/or Curtis Bay, EPA will require FMC to evaluate additional remedial actions, including the construction of physical barriers, to contain site-related groundwater contamination to protect the sediments, surface waters, and biota of Stonehouse Cove and Curtis Bay. In addition, based on the results of the sediment and pore water sampling, and subsequent benthic studies as applicable, sediment remediation may be required.

There is also concern that contaminated groundwater from the plume can volatilize and migrate vertically through soil into buildings through cracks, joints and utilities openings. The Remedy will require the installation of a vapor control system in all existing buildings and each newly constructed building.

Based on sampling conducted in the summer of 2009, EPA will determine the specific engineering controls necessary for the vapor control systems to eliminate the potential for vapor intrusion.

With respect to soil contamination, a Soil Management Plan was submitted to EPA in July 2010 and approved by EPA in September 2010. All construction activities or other

activities that might disturb contaminated soil will be completed in accordance with the approved Soil Management Plan.

With respect to soils that remain undisturbed at the Facility, such soils will be capped and surface water runoff controls will be implemented. The capping of undisturbed soils and the implementation of surface water runoff controls will be included in a Facility-wide Corrective Measures Implementation Plan.

2. Achieve Media Cleanup Standards

The Groundwater Recovery System will be operated until groundwater is restored to drinking water standards. Through additional groundwater sampling and analyses, EPA will also have FMC evaluate whether the Groundwater Recovery System is preventing site-related groundwater contamination from entering Stonehouse Cove, Curtis Bay, and site-adjacent properties. If the evaluation shows that site-related contamination continues to enter Stonehouse Cove, Curtis Bay, and/or site-adjacent properties at unacceptable concentrations, EPA will require FMC to evaluate additional remedial actions including construction of a barrier wall to contain Site-related groundwater contamination to protect the sediments, surface waters, and biota of Stonehouse Cove, Curtis Bay, and site-adjacent properties. In addition, based on the results of the sediment and pore water sampling, and subsequent benthic studies as applicable, sediment remediation may be required.

3. Remediating the Source of Releases

In all remedy decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. FMC is presently conducting a hydrogeologic study on an approximately 23-acre portion of land referred to as the North Parcel at the Facility. FMC discovered significant groundwater contamination at this parcel during a site-wide groundwater sampling effort in the autumn of 2008. Once FMC completes the hydrogeological study on the North Parcel, FMC will submit to EPA for review and approval, a RCRA Facility Investigation, and if appropriate, a Corrective Measures Study evaluating remedial alternatives.

FMC will continue to operate the Groundwater Recovery System to reduce the mass of VOC contamination in the groundwater and minimize the future migration of contaminants into Stonehouse Cove, Curtis Bay, and site-adjacent properties. The Soil Management Plan will require the proper removal and off-site disposal of contaminated soils that are disturbed during any earth moving activities conducted on-Site, thereby removing the source of contaminants from Facility soils as well as a source of groundwater contamination.

VI. Financial Assurance

EPA will require FMC to provide assurances of financial responsibility for completing the Remedy. Financial Assurance details will be provided in the Permit Modification.

VII. Declaration

Based on the Administrative Record, I have determined that the Remedy as set forth in this Final Decision is appropriate and will be protective of human health and the environment.

Date: 4/14/11

Abraham Ferdas, Director
Land and Chemicals Division
U.S. Environmental Protection Agency, Region III

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted Electronically

March 10, 2021

Mr. John Hopkins
Land and Chemicals Division (3LC20)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Revised Ground Water Monitoring Plan for the Main Parcel
Permit for Corrective Action, EPA ID No MDD 0030781875
FMC Corporation, Former Agricultural Products Group Facility (Site)
Baltimore, Maryland

Dear Mr. Hopkins:

FMC Corporation is submitting the referenced Ground Water Monitoring Plan (GWMP) for the Main Parcel to the United States Department of Environmental Protection (USEPA) for review and approval. The GWMP was prepared in accordance with Part II.B.1 of the Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) signed by the USEPA on January 30, 2013. This GWMP contains slight revisions to, and supersedes, the 2017 GWMP for the Main Plant (Appendix C to the Corrective Measures Implementation (CMI) Work Plan for Ground Water Recovery Optimization) to allow for redevelopment of the Site by NorthPoint Development (NorthPoint).

As discussed with you during a September 10, 2020 web conference, the primary revisions include the following:

- Identification of a revised ground water monitoring well network for the Main Parcel,
- Abandonment procedures for 14 monitoring wells that will be impacted due to the planned redevelopment activities,
- Installation methods for five (5) monitoring wells to be installed as replacements for abandoned wells and included in the monitoring well network.

The Site property was subdivided in December 2020 and a majority of the 67-acre Main Parcel was sold to NorthPoint for redevelopment; FMC retains ownership of two parcels, which include the Inactive Disposal Area and the Ground Water Treatment Plant. NorthPoint has indicated that construction activities necessary to prepare the remaining property for redevelopment will begin in March 2021. As such, we anticipate completing the well abandonments in late March/early April this year to avoid potential damage to the wells from construction activities.

The installation of the five (5) new monitoring wells will be completed following the site development to ensure construction activities do not damage the wells. NorthPoint has indicated the construction of the first Building will be substantially complete in early 2022, with construction of Building 2 to begin about the same time. Beyond building construction, they will be performing other intrusive activities including site demolition and utility installation activities across the site throughout 2021 and 2022. As such, based on NorthPoint's current redevelopment schedule, which is subject to change, FMC anticipates the following tentative timeframes for the installation of the new wells:

- Wells MW-12R and MW-12AR, to be located south of new Building 1, can be installed in the spring 2022.
- Well MW-4R, to be located south of Building 2, would be installed in 2023. Well MW-4R is used for water level monitoring only and is not critical to monitoring the efficacy of the ground water recovery system.
- Well MW-9AR, to be located west of Building 3, would be installed in 2023. This is an interior well and not critical to monitoring the efficacy of the ground water recovery system.
- Well MW-35A, which will be located on the property retained by FMC, can be installed in the spring 2021. MW-35A will provide new ground water quality data in the direction downgradient of well MW-9A.

Wells MW-29, MW-29A, MW-30 and MW-30A are located outside of any building footprint, but within the area of redevelopment. These wells and any other wells determined to be proximal to the construction activities will be marked with high visibility signage and protected using structural barriers (e.g., jersey style barriers, construction fencing, steel plates) by the contractor during the Site's redevelopment.

If you have any questions regarding the document, please do not hesitate to contact me at (215) 299-6358.

Sincerely,

Jonathan Bucca, P.E.
Remediation Project Manager

Enclosure: Ground Water Monitoring Plan for the Main Parcel, Former Agricultural Products Group Facility Baltimore, Maryland

cc: L. Pizarro, EPA
B. Coblentz, Maryland Department of Environment
D. Groux, FMC
A. Joslyn, FMC
B. McGinnis, FMC
E. Feryo, FMC
M. Erbe, ERM

Appendix C
Ground Water Monitoring Plan for the Main Parcel

Former Agricultural Products Group Facility
Baltimore, Maryland

March 2021

Prepared for:

FMC Corporation
FMC Tower at Cira Center South

2929 Walnut Street
Philadelphia, PA 19104

The business of sustainability

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Acronyms and Abbreviations

Name	Description
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMP	Corrective Measures Plan
CMS	Corrective Measures Study
DO	Dissolved Oxygen
DQO	Data Quality Objective
ERM	Environmental Resources Management
FMC	FMC Corporation
GWMP	Ground Water Monitoring Plan
HASP	Health and Safety Plan
MCL	Maximum Concentration Level
mL/min	Milliliter per Minute
mV	Millivolts
ORP	Oxidation/Reduction Potential
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Levels
SMP	Soil Management Plan
SVOC(s)	Semivolatile Organic Compounds
TOC	Total Organic Carbon
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1 INTRODUCTION

On behalf of FMC Corporation (FMC) and NorthPoint Development, LLC (NPD), Environmental Resources Management (ERM) has prepared this Ground Water Monitoring Plan (GWMP) for submittal to the United States Environmental Protection Agency (USEPA) with respect to the former Agricultural Products Group facility, Baltimore, Maryland. The former Main Parcel consists of the approximately 67-acre portion of the 90-acre property (Site) (Figure 1). This GWMP replaces the January 25, 2017 document titled Ground Water Monitoring Plan for the Main Plant (ERM, 2017a) which is Appendix C to the Corrective Measures Implementation (CMI) Work Plan for Ground Water Recovery Optimization (50 Percent Design Submittal) (ERM, 2017b), approved by the USEPA in a letter dated March 2, 2017 (USEPA, 2017). The Site was formerly part of FMC's Agricultural Products Group, with active manufacturing operations having ceased in 2008 and equipment and buildings dismantled and removed in 2008-2009. This updated GWMP supports the redevelopment of the approximately 67-acre Main Parcel.

This updated GWMP provides the monitoring procedures for collecting water levels and monitoring ground water quality on the Main Parcel. A complimentary GWMP for the North Parcel describes the monitoring procedures for collecting water levels and monitoring ground water quality on the North Parcel, which is located at 1600 East Patapsco Avenue.

Proposed changes to the 2017 GWMP for the Main Parcel were discussed with USEPA's John Hopkins during a September 10, 2020 conference call with FMC and NPD; during this call Mr. Hopkins provided verbal agreement with the changes. These changes, which are incorporated herein, accommodate the redevelopment of the Site while maintaining the integrity of the overall ground water monitoring program that is required by Part II.B.1.b of the Permit for Corrective Action for the Site (USEPA, 2013). These changes include the following:

- Abandonment of eight (8) shallow depth monitoring wells screened in the Pleistocene aquifer,
- Installation of two new shallow depth wells in areas outside the new buildings' footprints,
- Abandonment of six (6) intermediate depth monitoring wells screened in the Patapsco aquifer, and
- Installation of three new intermediate depth wells in areas outside the new buildings' footprints.

1.1 Background

The annual ground water monitoring program has been implemented since the ground water recovery system came on-line in 1997. Monitoring wells located on the North Parcel that were historically included in this annual ground water monitoring program are now monitored under a separate GWMP for the North Parcel (ERM, 2016), and the results are reported in a stand-alone report. In accordance with the January 2017 GWMP (ERM, 2017a), the ground water monitoring program consists of three elements:

- Water Level Monitoring. Ground water elevations are collected annually at up to 59 shallow wells, 33 intermediate wells, and one surface water monitoring point;
- Ground Water Quality Data Collection and Analysis. Annual ground water quality monitoring consists of sampling 26 Pleistocene monitoring wells (shallow) and 15 Patapsco monitoring wells (intermediate and deep). Samples are collected and analyzed for 10 volatile organic compounds (VOCs), 20 semivolatile organic compounds (SVOCs), and total organic carbon (TOC).

Data Evaluation. Ground water elevation contour maps for the shallow and intermediate ground water flow zones depict the ground water flow contours when the recovery system is operating. The ground water quality data collected annually is evaluated using temporal trend plots. The data evaluation is

provided in an annual report submitted to USEPA in January of each year. The Ground Water Optimization Corrective Measures Study (CMS) Report (ERM, 2016a), submitted to USEPA on 7 September 2016 and approved by USEPA in a letter dated 3 October 2016 (USEPA, 2016), recommended changes to the ground water recovery and treatment system at the Main Parcel to improve control of facility-related ground water contamination potentially entering Site-adjacent waterbodies and to increase removal of contaminant mass. The changes implemented by FMC and approved by USEPA were documented in the Corrective Measures Implementation Report for Ground Water Recovery Optimization dated May 13, 2019 (ERM, 2019), included the following corrective measures:

- Optimization of the ground water recovery system with installation of six new shallow recovery wells at RW-2090DR, ER, E1, and FR, RW-2091A1 and 2091E1, and one new intermediate recovery well RW-2092G;
- Shut down of shallow recovery wells RW-2090A, B, D, K, and M due to absence of contamination in the areas upgradient of these wells and relocation of RW-2091A. Shut down of intermediate recovery well RW-2092E;
- Operation and maintenance of the ground water recovery system;
- Installation of six new monitoring wells labeled MW-63, MW-64, MW-64A, MW-65, MW-66 and MW-67A; and
- Long-term ground water monitoring of select on-site monitoring wells.

This GWMP presents modifications to the long-term ground water monitoring of select on-site monitoring wells to support the redevelopment of the property.

Historical ground water quality data for the Main Parcel were presented in the document titled Comprehensive Ground Water Study Report (ERM, 2016b), and has been presented in annual site-wide ground water monitoring reports.

1.2 Purpose

This GWMP contains slight revisions to the plan presented in the 2017 GWMP for the Main Plant (ERM, 2017a). The purpose of the long-term monitoring remains the same, namely to evaluate the effectiveness of the ground water recovery system by: 1) evaluating ground water flow patterns based on ground water contour maps; and 2) monitoring ground water quality in the shallow and intermediate flow zones over time. Long-term monitoring will consist of annual water level monitoring and ground water sampling. Additionally, five new monitoring wells will be installed to replace select monitoring wells impacted by the redevelopment activities on the Main Parcel. The monitoring described herein will occur only in monitoring wells located on the Main Parcel.

This long-term ground water monitoring plan includes the following:

- Identification of the ground water monitoring well network for the Main Parcel;
- Abandonment procedures for 14 monitoring wells that will be impacted due to the planned redevelopment activities;
- Protection methods for monitoring wells located in any driveway, parking area, or other trafficked area post-redevelopment;
- Installation methods for five (5) monitoring wells to be installed as replacements for abandoned wells and included in the monitoring well network;
- The proposed annual frequency of sample collection and the procedures to be used to collect and analyze ground water samples;

- Quality Assurance/Quality Control (QA/QC) procedures associated with collection of the ground water samples from the monitoring wells; and,
- Description of the data analysis and reporting.

1.3 Organization

The remainder of this long-term monitoring plan is organized as follows:

- Section 2 – Monitoring Well Abandonment. This section identifies the locations and abandonment methods for monitoring wells impacted by redevelopment at the Main Parcel.
- Section 3 – Monitoring Well Installation and Protection. This section identifies the locations and installation methods for new and replacement monitoring wells to complete the ground water monitoring network at the Main Parcel. Additionally, this section describes the protection of existing wells located within the redevelopment's limits of disturbance and in any driveway, parking area, or other trafficked area post-redevelopment.
- Section 4 – Sample Collection and Analysis. This section identifies the water level monitoring network and water level measurements. In addition, this section describes the procedures for the collection and analysis of ground water quality samples at the Main Parcel.
- Section 5 – Quality Assurance Project Plan. This section includes the QA/QC procedures for the monitoring program.
- Section 6 – Data Evaluation and Reporting. This section describes the methods to evaluate and report the water level and ground water quality data.
- Section 7 – Project Management. This section describes the roles and responsibilities of the parties, schedule and health and safety considerations for implementing the ground water monitoring.

2 MONITORING WELL ABANDONMENT

Wells located within or adjacent to the proposed building footprints will be permanently abandoned prior to construction in these areas. For those monitoring wells necessary to monitor ground water flow patterns or the efficacy of the ground water recovery system, a replacement well will be installed outside the new buildings' footprints following redevelopment. Wells proposed for abandonment are listed in Table 1 and identified on Figure 2. Wells located outside the planned building footprints but within the construction's limits of disturbance will be protected during constructions activities.

Well abandonment will be conducted in accordance with the Maryland Department of the Environment's (MDE) well abandonment regulations (COMAR 26.04.04.34) using the following methods:

- Wells will be abandoned and/or sealed by a well driller licensed by the Maryland State Board of Well Drillers;
- A Water Well Abandonment Sealing Report (Appendix A) will be completed for submittal no later than 45 days after abandonment and sealing of each well;
- Suitable materials for sealing a well include concrete, neat Portland cement grout, a mixture of Portland cement and sand, and bentonite;
- Prior to sealing the well it should be inspected to determine its condition and to determine if any obstructions are present that would interfere with sealing the well;
- The surface casing will be removed and if able, the PVC well casing will be pulled from the ground;

- If the PVC casing cannot be pulled out, it will be cut off at the ground surface and the well casing shall be filled with sealing material;
- The annular and/or interior space will be sealed so that it will not act as a channel for interchange of waters; and,
- If the well casing is removed, the entire length of the borehole shall be filled with sealing material.

3 MONITORING WELL INSTALLATION AND PROTECTION

3.1 Monitoring Well Installation

Five new monitoring wells will be added to the existing monitoring well network, two shallow and three intermediate wells. The locations of the proposed wells are presented on Figure 2.

Two new shallow wells will be installed to a depth of approximately 20 feet below ground surface with five (5) feet of well screen, consistent with the construction of the existing wells they are replacing. The new shallow monitoring wells will be designated with an “R” to indicate a replacement well, as follows:

- MW-4R; and
- MW-12R.

Two new intermediate wells will be installed to approximate depths of 40 and 60 feet bgs with 10 feet of screen, consistent with the construction of the existing wells they are replacing. To minimize potential drawdown of constituents from the shallow aquifer; a casing will be placed within the fine-grained unit below the shallow aquifer, but above the intermediate aquifer. The intermediate monitoring wells will be designated with an “R” to indicate a replacement well, as follows:

- MW-9AR; and
- MW-12AR.

A new well, MW-35A, will be installed outside of the new building footprint and south of the wells MW-9A, MW-31A and MW-32A that are scheduled for abandonment. The new well MW-35A will be installed proximal to the existing cluster “35” wells to monitor the intermediate aquifer consistent with “A” depth wells.

New wells will be installed by a Maryland-licensed well driller and in accordance with the requirements of COMAR 26.04.04 and all other applicable regulations. The wells will be drilled using hollow-stem auger methods and constructed using 2-inch diameter PVC machine-slotted screen and riser. A field geologist will oversee well installations, examine cuttings and generate a log of observations. The borehole annulus will be filled with an appropriately sized sand pack, bentonite seal and grout to the ground surface.

After completion, each well will be developed by pumping and surging water from the well until development water is clear and free of fine-grained sediment to the satisfaction of the field geologist. Well locations will also be surveyed for horizontal and vertical location using the existing site datum by a Maryland-licensed surveyor.

3.2 Monitoring Well Protection

Monitoring wells MW-4, MW-12R, MW-12AR, MW-30 and MW-30A are to be located in landscaped areas to further protect the wells from damage during future operations. Replacement well MW-9AR is proposed to be installed in a designated walkway between truck loading bays, outside of the driveway, to

minimize the potential for damage during facility operations. Well MW-35A will be installed within the boundaries of the GWTP, proximal to the existing cluster 35 wells and away from future operations.

The wells will be completed with a lockable cap inside a 12-inch diameter manhole constructed flush to grade with a secure, protective cover and lockable well cap.

4 SAMPLE COLLECTION AND ANALYSIS

4.1 Monitoring Well Network

The ground water monitoring well network will consist of select ground water monitoring wells located on-Site. The condition of the monitoring wells to be retained for the long-term monitoring program will be inspected and the results of the inspection will be recorded on the Monitoring Well and Security Inspection form included as Appendix B. Repairs to the monitoring well network will be made as necessary. This form will be filled in each year during the annual monitoring event to determine if well repairs are necessary.

4.1.1 Ground Water Quality

A total of 42 wells (39 existing wells and 3 replacement wells) have been identified for ground water quality monitoring: 26 wells in the shallow zone, and 16 wells in the intermediate zone. The monitoring wells to be sampled are listed below. The 42 wells include wells that have been included in the monitoring program since 1995 as well as the six (6) new wells added in 2017, and two relocated wells and one new well to be installed as part of this updated plan.

Figure 3 shows the locations of the wells proposed for inclusion in the ground water quality monitoring program. Table 2 presents the well construction details for the existing and replacement wells.

Shallow Wells	Intermediate Wells
MW-1, MW-7, MW-8, MW-10, MW-12R*, MW-14, MW-15, MW-16, MW-17, MW-18R, MW-27, MW-28, MW-29, MW-33, MW-35, MW-37, MW-38, MW-41, MW-42, MW-43 MW-44, MW-45, MW-63, MW-64, MW-65, MW-66	MW-1A, MW-7A, MW-8A, MW-9AR*, MW-14A, MW-15A, MW-16C, MW-16A, MW-18AR, MW-28A, MW-29A, MW-33A, MW-35A*, MW-43A, MW-64A, MW-67A

** New well.*

4.1.2 Water Level Monitoring

A total of 83 locations have been identified for annual ground water elevation monitoring; 52 wells in the shallow zone, 30 wells in the intermediate zone, and one surface water monitoring point. The monitoring well network for water level monitoring is listed below.

Figure 3 shows the locations of the wells proposed for inclusion in the ground water level monitoring program. Table 2 presents the well construction details. Construction details for new or replacement monitoring wells installed as part of the implementation of this GWMP will be added after well installation is complete.

Shallow Wells	Intermediate Wells	Surface Water Point
MW-1, MW-4R*, MW-7, MW-8, MW-10, MW-11, MW-12R*, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18R, MW-27, MW-28, MW-29, MW-30, MW-33, MW-34, MW-35, MW-37, MW-38, MW-41, MW-42, MW-43 MW-44, MW-45, MW-63, MW-64, MW-65,	MW-1A, MW-7A, MW-8A, MW-9AR*, MW-12AR*, MW-13A, MW-13C, MW-13D, MW-14A, MW-14C, MW-15A, MW-16C, MW-16A, MW-18AR, MW-28A, MW-29A,	Pier

MW-66, 2090A, 2090B, 2090CR, 2090DR, 2090ER, 2090FR, 2090GR, 2090H, 2090J, 2090K, 2090L, 2090M, 2091A, 2091A1, 2091B, 2091B1, 2091C, 2091D, 2091E, 2019E1, 2091F	MW-30A, MW-33A, MW-35A*, MW-35D, MW-43A, MW-64A, MW-67A , 2092A, 2092B, 2092C, 2092D, 2092E, 2091F, 2092G	

** New well.*

4.2 Synoptic Ground Water Elevations

Synoptic water level measurements will be obtained from the wells listed in Section 4.1.2 and Table 2 annually before the collection of the water quality samples. Water levels in monitoring wells will be measured using an electronic water level meter. The measurements will be collected to the nearest 0.01 foot relative to the top of the inner well casing. Water levels will be collected from active and inactive recovery wells using an electronic water level meter and measurement port in the wellhead or from data logging pressure transducers installed in the recovery wells.

4.3 Well Purging and Sampling

Ground water samples will be collected annually from the list of wells presented in Section 4.1.1. Monitoring wells will be purged following the soda straw method (USEPA, SESDPROC-301-R3, March 6, 2013a, Page 26) and the USEPA low-flow ground water sampling procedures (USEPA, 1996). The procedures for low-flow purging and sampling to be used for all monitoring wells is described below.

4.3.1 Peristaltic Pumps

Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.

- Polyethylene tubing will be used to purge the wells. The tubing will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.
- When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 milliliters per minute (mL/min)) in order to minimize disturbance of the water column.
- The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.3 feet of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.3 feet, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.3 feet when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low-flow/minimum drawdown protocol. If at any point drawdown stabilizes and water level reaches equilibrium while using one of the alternative purge and sample methods, resume standard low-flow procedure, pumping at 100 mL/min. Drawdown stabilization will be defined as water level difference of 0.3 feet or less over three consecutive readings.
- When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval prior to purging.
- Measurements of field parameters [pH, temperature, specific conductivity, oxidation-reduction potential (ORP), turbidity and dissolved oxygen (DO)] will be collected utilizing an in-line flow cell at 5 minute intervals during purging, until stabilization occurs. The flow cell may be emptied as necessary to prevent particulate/sediment build-up in the flow cell resulting in biased high turbidity readings.
- Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
    - +0.1 units for pH;

  - +10% for temperature;
  - + 3% for specific conductivity;
  - +10 millivolts (mV) for ORP; and,
  - +10% for turbidity and DO.

- Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter, but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then all samples but VOCs will be collected at that time.
- VOCs will be sampled using the Soda Straw Method. Tubing will be allowed to fill using the peristaltic pump, the pump speed will be reduced, and then the flow is reversed to push the water out of the tubing. The tubing is brought to the surface and the water in the tubing is allowed to fill the VOC vials. Avoid completely filling the tubing to avoid contact with the flexible pump head tubing. The method will be repeated until all the VOC sample containers are filled.

4.3.2 Submersible Pumps

Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.

- A low-flow submersible pump and polyethylene tubing will be used to purge the wells. The pump will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.
- When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 mL/min) in order to minimize disturbance of the water column.
- The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.3 feet of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.3 feet, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.3 feet when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low-flow/minimum drawdown protocol. If at any point drawdown stabilizes and water level reaches equilibrium while using one of the alternative purge and sample methods, resume standard low-flow procedure, pumping at 100 mL/min. Drawdown stabilization will be defined as water level difference of 0.3 feet or less over three consecutive readings.
- When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval to begin with.
- Measurements of field parameters [pH, temperature, specific conductivity, oxidation-reduction potential (ORP), turbidity and dissolved oxygen (DO)] will be collected utilizing an in-line flow cell at 5 minute intervals during purging, until stabilization occurs. The flow cell may be emptied as necessary to prevent particulate/sediment build-up in the flow cell resulting in biased high turbidity readings.
- Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
  - +0.1 units for pH;
  - +10% for temperature;

  - + 3% for specific conductivity;
  - +10 mV for ORP; and
  - +10% for turbidity and DO.

- Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter, but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case that the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then samples will be collected at that time.

4.3.3 Alternate Sampling Methods

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.3 feet of drawdown. In these cases, a modified low flow method (depending on the water level in relation to the well screen) would be utilized as presented in Appendix C.

4.4 Sample Analysis

The ground water samples will be submitted to the laboratory for analysis of 10 VOCs via EPA Method 8260, 20 SVOCs via EPA Method 8270, and TOC via EPA Method 9060 (Table 3). The 10 VOCs and 20 SVOCs are the same compounds included in the 2017 GWMP for the Main Plant (ERM, 2017a). Table 4 summarizes the number of proposed samples, including QA/QC samples, and the field and laboratory analysis.

4.5 Field Decontamination

All non-dedicated purging and sampling equipment will be decontaminated prior to beginning purging and sampling activities, after use in each well, and prior to leaving the Site with a non- phosphate detergent/tap water solution, rinsed with tap water, followed by a distilled or deionized water rinse.

Submersible pumps will be decontaminated by pumping a non- phosphate detergent solution through the pump or by breaking down the pump and cleaning the interior with a decontamination solution. If a detergent solution is pumped through the pump, the outside of the pump will then be cleaned and scrubbed with a bristle brush and then the pump rinsed with distilled water. If the pump is broken down, the interior and the exterior of the pump will be sprayed with a non-phosphate detergent solution and then scrubbed with a bristle brush. The pump will then be rinsed with distilled water.

4.6 Management of Investigation-Derived Waste

Soil cuttings generated during installation of the monitoring wells will be placed on plastic sheeting and covered. The soil cuttings will be sampled to determine adherence with the standards included in the August 2020 Soil Management Plan (SMP). The soil will be managed in accordance with the SMP requirements.

Water generated during well development, purging, and decontamination will be contained and placed into the on-site ground water treatment plant (GWTP) for treatment.

Any disposable equipment or equipment that cannot be decontaminated will be disposed in the general trash.

4.7 Management of Sampling Records and Field Data

The field sampling team is responsible for maintaining records and notes of all activities. A field notebook will be maintained by the sampling team describing all sampling activities and observations. This includes, but is not limited to field equipment calibration, description of all samples collected, field screening results and measurements, date and time of sampling and purging activities, any Site visitors, any problems or downtime, and date and time of sample delivery to the laboratory. Each entry in the book will be made in indelible ink. If an error is made, it will be lined through, initialed and dated and the correct entry made. At the end of the day, or when a field notebook changes between members of the sampling team, it will be noted and signed. In addition, field sheets will be utilized to record purging activities and measurements at each monitoring well.

4.8 Sample Handling and Shipment

New, clean, laboratory-provided containers will be used to collect each sample. Immediately after collecting each sample, the sample container will be closed, labeled, sealed in a plastic bag, and placed into an insulated cooler containing wet ice. Sample containers will be stored in a locked and secure area. All necessary chemical preservatives will be added, as appropriate, to the bottles by the laboratory prior to shipping the sample containers. Preservative type and source will be documented in the sampling team field book.

The field team will affix a self-adhesive label to each container before collecting samples if a label is not already affixed to the laboratory-supplied sample container. At a minimum, the sample label will contain the following:

- Client – Project Name;
- Sample identification number;
- Date and time of sample collection;
- Sampler's initials;
- Analyses to be performed; and
- Preservatives added.

Chain-of-custody forms will accompany the samples inside the cooler for delivery to the off-site laboratory. A sampling team member will indicate relinquishment of the samples on the chain-of-custody form, and these forms will be sealed in a zip-closure type plastic bag or a laboratory supplied sample bag and inserted into the cooler before sealing the cooler for shipment. Each cooler will contain sufficient ice to ensure the proper temperature is maintained during shipment, and will be packed in a manner to prevent damage to sample containers. Samples will be shipped via commercial delivery service for overnight delivery or courier to the off-site analytical laboratory.

The following information will be recorded on the chain-of-custody forms:

- Project name;
- Sample identification numbers;
- Sample type;
- Date and time of collection;
- Analyses to be performed and preservatives;
- Number of sample containers;

- Shipping method (carrier air bill number, if applicable);
- Name of recipient laboratory; and,
- Signatures of parties relinquishing and receiving the sample cooler at each transfer point.

Custody of samples must be maintained and documented at all times. The sampling team will be responsible for ensuring that the chain-of-custody is maintained and each sample transfer is documented until the samples are shipped to the off-site laboratory.

5 QUALITY ASSURANCE PROJECT PLAN

5.1 Data Quality Objectives

The overall Data Quality Objective (DQO) for the long-term ground water sampling is to provide data of sufficient quality to determine whether VOCs and SVOCs are present in ground water using analytical methods specified herein. To meet this DQO, definitive quantitation of the concentrations of constituents in ground water by the analytical laboratory is needed for at least 95 percent of the samples. If quantitation for less than 95 percent of the samples is obtained, the project team will make a case-by-case determination as to whether additional samples will be collected and submitted for analysis to replace some or all of the samples that were compromised or consumed without usable data being generated.

5.2 Quality Assurance and Quality Control Samples

QA/QC samples will be collected and analyzed to verify that the data are acceptable. QA/QC samples will be collected at a rate of 1 per 20 samples during the ground water monitoring event. Table 4 lists the proposed number and types of QA/QC samples proposed for collection during each ground water monitoring event.

5.3 Reporting Limits

Table 5 provides the reporting limits for water analysis that should be achieved for each of the parameters to be analyzed, and compares the reporting limits to the USEPA's Regional Screening Level (RSL) for tap water and the USEPA maximum concentration level (MCL) (USEPA, 2016). Although Table 5 indicates that in a few instances the reporting limits for selected VOCs are higher than the current USEPA screening level, reporting limits are sufficient for key contaminants, such as chlorobenzene. Additionally, the laboratory can report results to the method detection limit with the use of a "J" qualifier; method detection limits are generally five to ten times lower than the reporting limit. The reporting limits listed in Table 5 will be provided to the selected laboratory to make sure the reporting or method detection limits will be equal to or lower than those listed in Table 5.

6 DATA ANALYSIS AND REPORTING

Ground water monitoring reports will be prepared for submittal to USEPA as part of the annual report submitted pursuant to Part II.C of the Permit for Corrective Action (USEPA, 2013). The report will summarize data collected, which will be compiled and evaluated. Additionally, the report will include a brief discussion of the data evaluation, temporal tends associated with the data, and recommendations. In addition, ground water flow contour maps for the shallow and intermediate flow zones will be provided with each report.

7 PROJECT MANAGEMENT

7.1 Project Team

Key roles of the team that will perform the work described herein are:

- FMC Corporation –FMC is directly responsible for the implementation of the long-term ground water monitoring. The FMC Project Manager will be Mr. Brian McGinnis.
- Monitoring Contractor – Parsons will be responsible for implementing the monitoring portion of this plan, including the purging and sampling of the monitoring wells, shipping the samples to the off-site laboratory, and compiling and reporting the data. The monitoring contractor will report directly to FMC.
- Off-site Laboratory – The ground water samples will be analyzed by a qualified laboratory identified and selected by FMC or the monitoring contractor. The off-site laboratory will report directly to the monitoring contractor.
- Drilling Contractor - A Maryland state-licensed drilling contractor will abandon the existing monitoring wells and install the new monitoring wells. The drilling contractor will be responsible for obtaining well installation permits and reporting of the well abandonments to the local and state regulatory agencies.

7.2 Health and Safety

FMC recognizes the need to ensure the work is conducted safely and in accordance with the health and safety procedures established for the Site. During the implementation of the fieldwork described herein, there is the potential for chemical exposures to workers, as well as typical physical hazards associated with the Site work. The health and safety procedures required during the field investigation will be included in a project-specific Health and Safety Plan (HASP) that covers specific activities associated with well installation and ground water sampling. The HASP and any HASP Supplement(s) will conform to Occupational Safety and Health Administration (OSHA) and USEPA requirements including, but not limited to, 29 Code of Federal Regulations (CFR) 1910.120 (Federal Government of the United States, 2009).

7.3 Schedule

The schedule for ground water monitoring of the Main Parcel will be as follows:

- Synoptic water level measurements will be collected annually; and
- Ground water quality samples will be collected annually.

The Main Parcel annual sampling event will likely be conducted concurrent with the annual North Parcel ground water quality sampling. Ground water monitoring results will be summarized in a stand-alone report submitted to USEPA as an attachment to the annual report submitted in January of each year.

8 REFERENCES

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FIGURES

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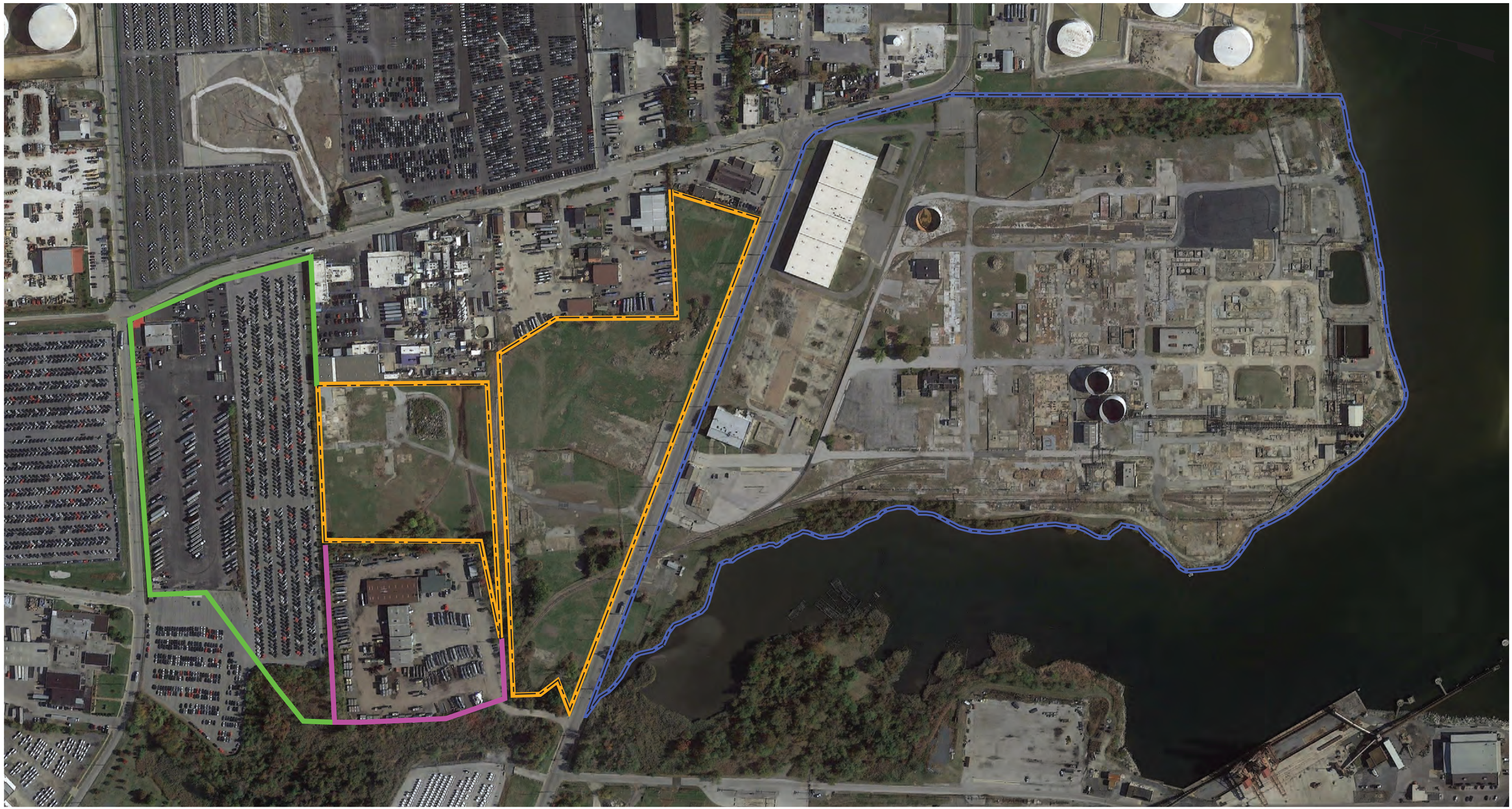

LEGEND

SITE BOUNDARY

MAIN PARCEL BOUNDARY

NORTH PARCEL BOUNDARY

DANA PROPERTY BOUNDARY

FLEET PROPERTY BOUNDARY

0 300 600

SCALE FEET

FIGURE 1
SITE LAYOUT
Former Agricultural Products Group Facility
Baltimore, Maryland

Environmental Resources Management
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ERM

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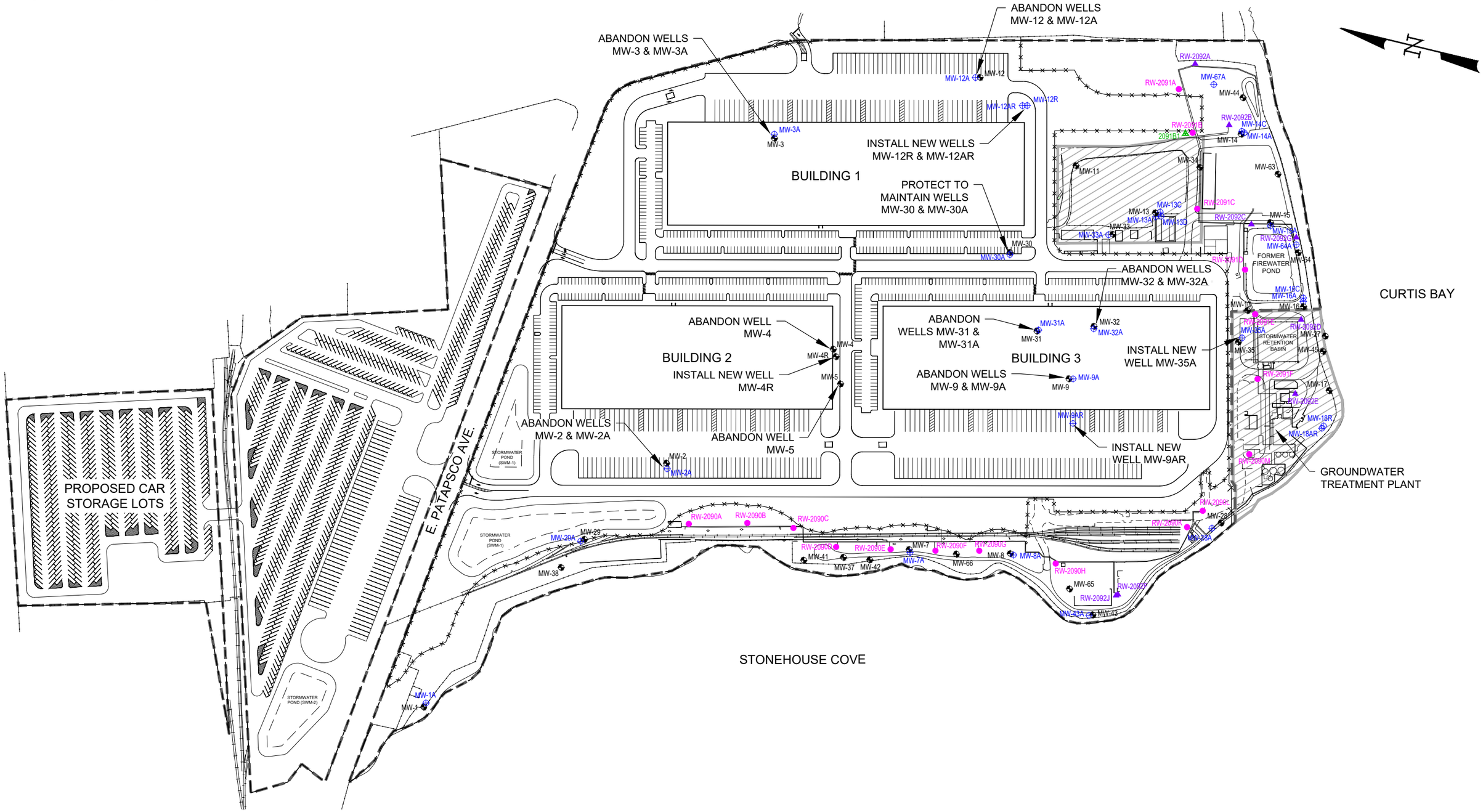

LEGEND

SITE BOUNDARY

PROPOSED FENCE

FMC CORPORATION (FMC) LOT

NORTHPOINT DEVELOPMENT (NPD) LOT

SHALLOW DEPTH MONITORING WELL

INTERMEDIATE DEPTH MONITORING WELL

SHALLOW DEPTH RECOVERY WELL

INTERMEDIATE DEPTH RECOVERY WELL

SHALLOW DEPTH PIEZOMETER

0 250 500

SCALE FEET

FIGURE 2
MODIFICATIONS TO GROUND WATER MONITORING PROGRAM WELLS
Former Agricultural Products Group Facility
Baltimore, Maryland

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ERM

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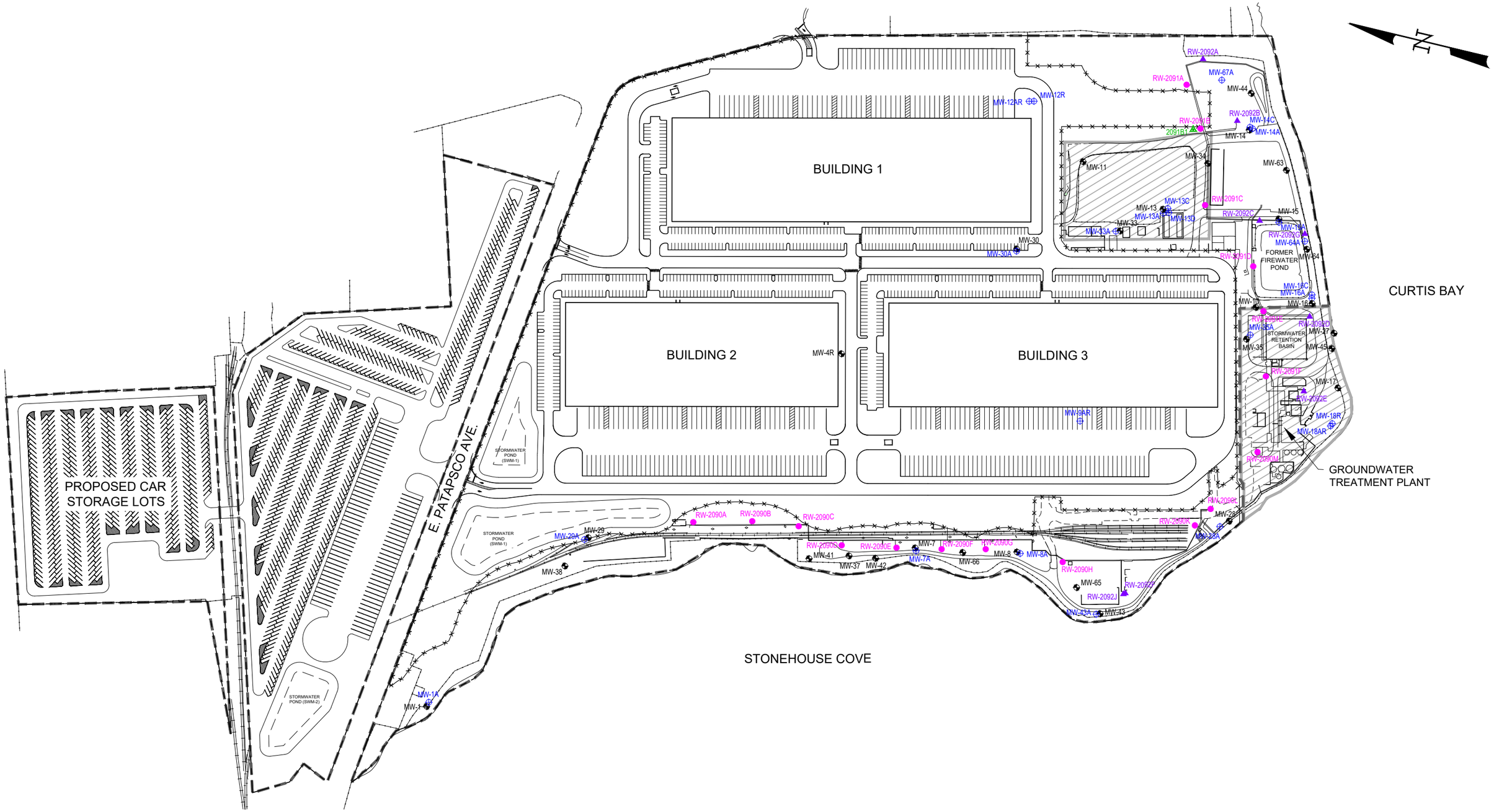

LEGEND

SITE BOUNDARY

PROPOSED FENCE

FMC CORPORATION (FMC) LOT

NORTHPOINT DEVELOPMENT (NPD) LOT

SHALLOW DEPTH MONITORING WELL

INTERMEDIATE DEPTH MONITORING WELL

SHALLOW DEPTH RECOVERY WELL

INTERMEDIATE DEPTH RECOVERY WELL

SHALLOW DEPTH PIEZOMETER

0 250 500

SCALE FEET

FIGURE 3
GROUND WATER MONITORING WELL NETWORK
Former Agricultural Products Group Facility
Baltimore, Maryland

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TABLES

Table 1
Monitoring Wells to be Protected, Abandoned or Relocated due to the Redevelopment Project
Former Agricultural Products Group Facility, Baltimore, Maryland

Well ID	Well Diameter (inches)	TOC Elev. (Jan. 09 Resurvey)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Proposed Action	Replacement Action
MW-02	2	12.59	22	17 - 22	Abandon	NA
MW-02A	2	12.92	42	37 - 42	Abandon	NA
MW-03	2	17.78	22	17 - 22	Abandon	NA
MW-03A	2	17.59	70	65 - 70	Abandon	NA
MW-04[1]	2	11.70	20	15 - 20	Abandon	Replace with a new well MW-04R to the south
MW-05	5	11.19	20	15 - 20	Abandon	NA
MW-09	2	12.40	20	15 - 20	Abandon	NA
MW-09A[1]	2	12.32	36	31 - 36	Abandon	Replace with a new well MW-09AR to the south
MW-12[1]	2	19.63	22	17 - 22	Abandon	Replace with a new well MW-12R to the southeast
MW-12A	2	19.71	42	37 - 42	Abandon	MW-12AR to the southeast
MW-30	2	16.73	15	10 - 15	Protect and maintain well for water level gauging	NA
MW-30A	2	13.72	61	56 - 61	Protect and maintain well for water level gauging	NA
MW-31[1]	2	14.83	13	13-Aug	Abandon	NA
MW-31A	2	14.65	65	60 - 65	Abandon	NA
MW-32	2	14.30	15	15-Oct	Abandon	NA
MW-32A	2	15.86	66	61 - 66	Abandon	Replace with a new well MW-35A to the south

Notes:
TOC - Top of Casing.
ft bgs - feet below ground surface.
NA - Information not available or not applicable.
[1] - Designates wells that are sampled

Table 2
Main Parcel Monitoring and Recovery Well Construction Information
Former Agricultural Products Group Facility, Baltimore, Maryland

Well ID	Well Diameter	TOC Elev. [2]	Total Depth (ft bgs)	Screen Interval (ft bgs)
54 Monitoring Wells Located on the Main Parcel				
MW-01[1]	2	8.92	20	15 - 20
MW-01A[1]	2	10.14	61	56 - 61
MW-04R*[1]	2	NA	20	15 - 20
MW-07[1]	2	14.78	22	17 - 22
MW-07A[1]	2	11.29	61	56 - 61
MW-08[1]	2	12.49	22	17 - 22
MW-08A[1]	2	12.03	58	53 - 58
MW-09AR*[1]	2	NA	36	31 - 36
MW-10	2	10.36	16	11 - 16
MW-11	2	19.98	19.5	14.5 - 19.5
MW-12R*[1]	2	NA	22	17 - 22
MW-12AR*	2	NA	42	37 - 42
MW-13	2	17.33	22	17 - 22
MW-13A	2	19.61	42	37 - 42
MW-13C	2	16.93	92	87 - 92
MW-13D	4	19.97	32	27 - 32
MW-14[1]	2	16.23	21	16 - 21
MW-14A[1]	2	17.12	61	56 - 61
MW-14C	2	16.45	97	92 - 97
MW-15[1]	2	13.36	22	17 - 22
MW-15A[1]	2	13.13	NA	NA
MW-16[1]	2	11.07	20	15 - 20
MW-16A[1]	2	11.37	52	47 - 52
MW-16C[1]	2	11.34	97	92 - 97
MW-17[1]	2	10.91	20	15 - 20
MW-18R[1]	2	9.69	52	47 - 52
MW-18AR[1]	2	9.91	NA	NA
MW-27[1]	2	11.25	20	15 - 20
MW-28[1]	2	12.71	22	17 - 22
MW-28A[1]	2	12.79	62	57 - 62
MW-29[1]	2	11.93	22	17 - 22
MW-29A[1]	2	11.32	62	57 - 62
MW-30	2	16.73	15	10 - 15
MW-30A	2	13.72	61	56 - 61
MW-33[1]	2	13.88	16	11 - 16
MW-33A[1]	2	14.47	67	62 - 67
MW-34	2	15.07	32	27 - 32
MW-35[1]	2	11.00	30	25 - 30
MW-35A*[1]	2	NA	65	60 - 65
MW-35D	4	11.16	30	10 - 30
MW-37[1]	2	10.10	32	17 - 32
MW-38[1]	2	7.72	25	10 - 25
MW-41[1]	2	9.44	17	7-17
MW-42[1]	2	9.87	34	24-34
MW-43[1]	2	6.04	16	6-16
MW-43A[1]	2	6.00	33.5	23.5-33.5
MW-44[1]	2	16.85	20	15-20
MW-45[1]	2	11.23	32	27-32
MW-63[1]	2	12.77	30	25-30
MW-64[1]	2	11.76	26	21-26
MW-64A[1]	2	11.80	60	50-60
MW-65[1]	2	4.09	20	15-20
MW-66[1]	2	10.14	31.5	26.5-31.5
MW-67A[1]	2	11.91	60	50-60

Table 2
Main Parcel Monitoring and Recovery Well Construction Information
Former Agricultural Products Group Facility, Baltimore, Maryland

Well ID	Well Diameter	TOC Elev. [2]	Total Depth (ft bgs)	Screen Interval (ft bgs)
28 Recovery Wells Located on the Main Parcel				
2090A (RW-06)	6	10.13	33.7	17.7-27.7
2090B (RW-07)	6	9.91	38.5	17.5-32.5
2090CR (RW-08)	6	10.13	36.5	20.5-30.5
2090DR (RW-09)	6	11.54	31.4	15.4-25.4
2090ER (RW-10)	6	9.91	21.6	5.6-15.6
2090FR (RW-11)	6	13.26	27.1	11.1-21.1
2090GR (RW-12)	6	11.82	28.7	12.7-22.7
2090H (RW-13)	6	9.62	38.7	22.7-32.7
2090J (RW-14)	6	6.89	32.6	15.6-26.6
2090K (RW-15)	6	12.03	32	10.5-26.5
2090L (RW-16)	6	12.36	32	10.5-26.5
2090M (RW-05)	6	11.98	39	9-34
2091A (20)	6	15.15	41	14.5-35.5
2091A1	6	18.41	40	15-35
2091B (RW-02)	6	15.65	23	8-17
2091B1 (Piezometer)	2	12.70	41.6	31.6-41.6
2091C (RW-01R)	6	15.57	37.9	10.4-32.4
2091D (RW-19)	6	14.59	32.9	17.4-27.4
2091E (RW-18)	6	12.45	36.1	8.1-30.1
2090E1	6	9.91	35	10-30
2091F (RW-17)	6	12.20	34.1	12.6-28.6
2092F	6	9.65	63	38-58
2092G	6	14.7	65	40-60
2092A (RWP-01)	6	14.33	64	44-64
2092B (RWP-02)	6	15.27	67.6	41.6-61.6
2092C (RWP-03)	6	14.50	67.4	41.4-61.4
2092D (RWP-04)	6	12.64	59.7	33.7-53.7
2092E (RWP-05)	6	12.17	61.3	35.3-55.3
1 Surface Water Location on Main Parcel				
PIER	NA	4.3	NA	NA

Notes:
TOC - Top of Casing.
ft bgs - feet below ground surface.
* - Designates well to be installed following construction to support redevelopment. Well construction details may change when these are installed. Well details are based on the construction details for the existing wells that these new wells will replace.
NA - Information not available or not applicable.

RW-01R/2091C - recovery wells originally designated as RW and later changed to the current designations.

[1] - Designates wells that will be sampled.
[2] - Elevations are from January 2009 resurvey, April 2017 piezometer survey, or October 2017 new recovery well and monitoring well survey.

Table 3
Ground Water Monitoring Parameters and Reporting Limits
FMC Baltimore Former Agricultural Products Group Facility

Method	Compound	Proposed Reporting Limit	Proposed Method Detection Limit
10 VOC (µg/l) EPA 8260	Benzene	1.0	0.5
	Bromoform	5.0	2.5
	Chlorobenzene	1.0	0.5
	Chloroethane	1.0	0.5
	Chloroform	1.0	0.5
	cis-1,3-Dichloropropene	1.0	0.5
	trans-1,3-Dichloropropene	1.0	0.5
	Ethylbenzene	1.0	0.5
	Methylene chloride	1.0	0.5
	Trichlorofluoromethane	5.0	1.0
20 SVOCs (µg/l) EPA 8270	1,2,4-Trichlorobenzene	5.0	1.5
	1,2-Dichlorobenzene	5.0	1.5
	1,3-Dichlorobenzene	5.0	1.5
	1,4-Dichlorobenzene	5.0	1.5
	2,4,6-Trichlorophenol	5.0	1.5
	2,4-Dinitrophenol	15.0	2.0
	2-Chlorophenol	5.0	1.5
	2-Methylphenol	5.0	1.5
	2-Nitrophenol	5.0	1.5
	4-Chloro-3-methylphenol	5.0	1.5
	Aniline	15.0	2.0
	Bis(2-chloroethoxy)methane	5.0	1.5
	Bis(2-chloroisopropyl)ether	5.0	1.5
	Bis(2-ethylhexyl)phthalate	5.0	1.5
	Butyl benzyl phthalate	5.0	1.5
	Chrysene	5.0	1.5
	Di-n-butylphthalate	5.0	1.5
	Diethylphthalate	5.0	1.5
	Pentachlorophenol	15.0	2.0
	Phenol	5.0	1.5
TOC (mg/L) EPA 9060	Total Organic Carbon	1.0	0.5

Note: Proposed reporting limits are estimated, final values will depend upon the laboratory selected.

Table 4
Sampling and Analysis Matrix
FMC Baltimore Former Agricultural Products Group Facility

Matrix	Method of Collection	Number of Samples	Number of Trip Blanks[1]	Number of Equipment Blanks	Number of Duplicates	Total Number of samples	Analysis	Analytical Method
Water	Low-flow	42	5	2	2	51	10 VOCs	8260
		42	0	2	2	46	20 SVOCs	8270
		42	0	0	0	42	TOC	9060

NOTES:
[1]Trip blanks are sampled at a rate of one per cooler; therefore, more than one trip blank may be analyzed.

Table 5
Comparison of Laboratory Reporting and Method Detection Limits to USEPA's Screening Criteria
FMC Baltimore Former Agricultural Products Group Facility

PARAMETER	Proposed Reporting Limit (µg/l)	Proposed Method Detection Limit (µg/l)	USEPA Screening Criteria[1]	USEPA Maximum Contaminant Level
10 VOCs (µg/l)				
Benzene	1.0	0.5	0.46	5
Bromoform	5.0	2.5	3.3	80
Chlorobenzene	1.0	0.5	78	100
Chloroethane	1.0	0.5	21,000	NS
Chloroform	1.0	0.5	0.22	80
cis-1,3-Dichloropropene	1.0	0.5	0.47	NS
trans-1,3-Dichloropropene	1.0	0.5	0.47	NS
Ethylbenzene	1.0	0.5	1.50	700
Methylene chloride	1.0	0.5	11	5
Trichlorofluoromethane	5.0	1.0	5,200	NS
20 SVOCs (µg/l)				
1,2,4-Trichlorobenzene	1.5	0.5	1.20	70.00
1,2-Dichlorobenzene	1.5	0.5	300	600
1,3-Dichlorobenzene	1.5	0.5	NS	NS
1,4-Dichlorobenzene	1.5	0.5	0.48	75
2,4,6-Trichlorophenol	5.0	1.5	4.1	NS
2,4-Dinitrophenol	15.0	2.0	3.9	NS
2-Chlorophenol	1.5	0.5	91	NS
2-Methylphenol	1.5	0.5	930	NS
2-Nitrophenol	1.5	0.5	NS	NS
4-Chloro-3-methylphenol	1.5	0.5	1,400	NS
Aniline	2.5	0.5	13	NS
Bis(2-chloroethoxy)methane	1.5	0.5	59	NS
Bis(2-chloroisopropyl)ether	1.5	0.5	NS	NS
Bis(2-ethylhexyl)phthalate	1.5	0.5	5.6	6.0
Butyl benzyl phthalate	1.5	0.5	16	NS
Chrysene	1.5	0.5	3.4	NS
Di-n-butylphthalate	1.5	0.5	900	NS
Diethylphthalate	1.5	0.5	15,000	NS
Pentachlorophenol	2.5	0.5	0.041	1
Phenol	1.5	0.5	5,800	NS
Total Organic Carbon	1.0	0.5	NS	NS

NOTES:

[1] USEPA Regional Tap Water Screening Levels, May 2016
Units are micrograms/liter (µg/l)
NS - Screening level or MCL not available
Yellow Highlight - Reporting Limit and/or Method Detection Limit is above the USEPA Maximum Contaminant Level (MCL), or in the absence of a MCL above the USEPA risk-based screening level.

APPENDIX A – MDE WELL ABANDONMENT FORM

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard ● Baltimore Maryland 21230
(410) 537-3000 ● 1-800-633-6101 ● http://www.mde.state.md.us

WATER WELL ABANDONMENT-SEALING REPORT FORM

SUBMIT COPIES OF COMPLETED FORM TO:

* COUNTY EVIRONMENTAL AGENCY (contact MDE, WMA if address needed)
* WELL OWNER
* MDE, WATER MANAGEMENT ADMINISTRATION, WELL PROGRAM

DATE WELL ABANDONED: _____ (month/day/year)

* PERMIT NUMBER OF ABANDONED WELL (if any) _____

* PERMIT NUMBER OF REPLACEMENT WELL: _____

* PERSON ABANDONING WELL: _____ WELL DRILLER'S LICENSE NUMBER: _____
CIRCLE: MWD / MSD / MGD

* OWNER'S NAME: _____

* WELL LOCATION:
COUNTY:_____
NEAREST TOWN:_____
TAX MAP_____BLOCK_____PARCEL_____
SUBDIVISION:_____
SECTION:_____LOT:_____
NEAREST ROAD:_____

SITE LOCATION MAP

* TYPE OF WELL BEING ABANDONED:
_____DRILLED _____JETTED
_____BORED _____HAND DUG
_____OTHER (specify)_____

* USE CODE:
_____DOMESTIC _____MUNICIPAL/PUBLIC
_____IRRIGATION _____INDUSTRIAL
_____TEST/OBSERVATION _____GEOTHERMAL

* TYPE OF CASING:
_____STEEL _____PLASTIC
_____CONCRETE _____OTHER (specify)
_____

SIZE OF CASING:_____INCHES IN DIAMETER

DEPTH OF WELL:_____FEET DEEP

WAS ANY CASING REMOVED?____YES _____NO
If yes, length removed, in feet:_____

WAS CASING RIPPED OR PERFORATED? ____YES____NO

LOG OF SEALING MATERIAL

MATERIAL	FEET	
	FROM	TO
VOLUME OF MATERIAL USED		

_____ MWD / MSD / MGS _____
SIGNATURE-MASTER WELL DRILLER OR SUPERVISING SANITARIAN LICENSE# CIRCLE ONE DATE

INSTRUCTIONS

TO: Person Completing "Water Well Abandonment and Sealing Report"

FROM: Waste Water Permits Program, On-Site Systems Division

SUBJECT: Instruction for Completing the "WATER WELL ABANDONMENT AND SEALING REPORT FORM"

DATE: June 1, 2007

GENERAL DISCUSSION:

A well is to considered as "abandoned" when any of the following conditions occur:

A. The well is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical; or,

B. The well has been permanently disconnected from any water supply system or irrigation system.

Once a well is determined to be abandoned, the well shall be sealed to prevent a hazard to the safety and well being of humans or animals and to prevent the interchange of waters of undesirable quality with those waters of desirable quality.

The owner of the well shall notify the Maryland Department of the Environment of the sealing of any well on the form provided within 30 days after sealing the well.

DIRECTIONS FOR COMPLETING REPORT FORM:

1. Fill out the form completely and legibly;

2. Provide the Well Construction Permit Number. This is the number on the 3"x5" metal tag on the wellhead. If the tag is not present or the permit number is not known, write in "unknown";

3. Fill in the location of the property information. The State Assessment and Taxation web site, www.dat.state.md.us, under "Real Property Data Search" can be used to identify the property Tax Map and Parcel information;

4. Draw in the major features on the property, such as buildings, and locate the abandoned and sealed well with reference to the fixed physical features on the property; and,

5. Complete the check box information describing the abandoned and sealed well and include the identification and volumes of the sealing material used.

SUBMITTAL OF THE REPORT FORM:

The original form and copies shall be made and submitted to the MDE, local environmental health agency, the Maryland Geological Survey and the well owner.

Submit the original and Maryland Geological Survey copy to:

Maryland Department of the Environment
Water Management Administration
Waste Water Permits Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1718

Additional copies shall be mailed to the:

1. **Local County Environmental Health Agency; and,**
2. **Well Owner.**

ADDITIONAL INFORMATION:

To obtain a copy of the Well Construction Regulations, COMAR 26.04.04, Abandonment Standards, .11, go to the Division of State Documents web site at www.dsd.state.md.us , under "COMAR Online", search for "26.04.04.11".

If you have any questions please feel free to contact your local county environmental health agency or call Ms. Swatzbaugh, MDE, at 410-537-3784.

REFERENCES:

Code of Maryland Regulations (COMAR), 26.04.04 -Well Construction, Regulation 11 – Abandonment Standards.

Annotated Code of the Public General Laws of Maryland, Environment Article 9-1309.

APPENDIX B – MONITORING WELL AND SECURITY INSPECTION FORM

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Inspector Name: _____

Weather Conditions: _____

General Site Conditions: _____

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
MW-1										
MW-1A										
MW-2										
MW-2A										
MW-3										
MW-3A										
MW-4										
MW-5										
MW-7										
MW-7A										
MW-8										
MW-8A										
MW-9										
MW-9A										
MW-10										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
MW-11										
MW-12										
MW-12A										
MW-13										
MW-13A										
MW-13C										
MW-13D										
MW-14										
MW-14A										
MW-14C										
MW-15										
MW-15A										
MW-16										
MW-16A										
MW-16C										
MW-17										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
MW-18R										
MW-18AR										
MW-27										
MW-28										
MW-28A										
MW-29										
MW-29A										
MW-30										
MW-30A										
MW-31										
MW-31A										
MW-32										
MW-32A										
MW-33										
MW-33A										
MW-34										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
MW-35										
MW-35D										
MW-37										
MW-38										
MW-41										
MW-42										
MW-43										
MW-43A										
MW-44										
MW-45										
MW-63										
MW-64										
MW-64A										
MW-65										
MW-66										
MW-67A										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
2090A										
2090B										
2090C										
2090DR										
2090E										
2090E1										
2090ER										
2090F										
2090FR										
2090G										
2090H										
2090J										
2090K										
2090L										
2090M										
2091A1										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Monitoring Well Inspection Form
Former Agricultural Products
Group Facility Main Parcel
Baltimore, Maryland

Well	Date	Time	Caps/Locks Missing	Bolts Missing	Casing Damage	Damaged Well Pad	Well Plug Missing	Well ID Missing/ Illegible	Notes/Response Required	Well Picture ID
			check if applicable							
2091B1										
2091E1										
2091A										
2091B										
2091C										
2091D										
2091E										
2091F										
2092A										
2092B										
2092C										
2092D										
2092E										
2092F										
2092G										

Note: Well IDs are current at time of plan approval and shall be updated as monitoring wells are abandoned or installed.

Security Inspection Form
Former Agricultural Products Group Facility Main Parcel
Baltimore, Maryland

Date: _____

Time: _____

Inspector Name: _____

Weather Conditions: _____

General Site Conditions: _____

☐ Locks Functioning ☐ Locks Missing/Damaged

☐ Signs Intact ☐ Signs Missing/Damaged

☐ Fencing Condition (holes, damage, corrosion)

Response Required	
Work Completed	
Photos/Figures Attached	
Response Contractor	Date: Inspector Name (Print): Inspector Signature: Conditions Reported To:

APPENDIX C – ALTERNATE SAMPLING METHODS

Alternate Sampling Methods

Variations on the Low-Flow Protocol for Low-Yielding Wells

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.1 m of drawdown. In these cases, one of the modified low flow methods (depending on the water level in relation to the well screen) described below will be used. Constant pumping is recommended when implementing these methods; field parameters and water depth will be measured at 5-minute intervals or at the end of every purge cycle, although it may be difficult to obtain stable measurements of certain parameters (i.e., DO, ORP, turbidity).

Alternative Method 1: Less than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at the mid point of the well screen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. Pumping will cease until the water level in the well equilibrates to static conditions. Purging will be repeated in this manner until a minimum of one casing volume is removed from the well. The well will then be allowed to recover sufficient volume to collect the required ground water sample from the midpoint of the screened interval, within 24 hours of the last purging event.

Alternative Method 2: More than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at midscreen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. This will remove at least one-half of a casing volume of water from the well. The well is then allowed 8 hours to recover, after which time a volume of water equal to the casing volume of the screened interval will be removed, removing approximately a full casing volume during the two purging events. Directly following the second purging event, the required ground water sample is to be collected from the midpoint of the screened interval.

Other modifications of the low-flow protocol may be required on a site-specific basis. Low-recharge wells screened across the water table are not amenable to either of the methods described above. Extremely low recharge wells may also not be practical to sample using any of the cited modifications. In this extreme case, the monitoring wells that have been identified as low-yield will be evacuated of all casing water and re-sampled as soon as sufficient recharge has entered the well to provide a sample. Samples for sulfide will be taken last of the bio-related parameters. If there is insufficient water to fill all samples, sulfide will be taken at a later time after the well has recharged. Data from such wells will be qualified to indicate that bias may be present.

Appendix D
Ground Water Monitoring Plan for the North Parcel

FMC Corporation
Former Agricultural Products Group Facility
Baltimore, Maryland

25 July 2022

The business of sustainability

ERM

Appendix D
Ground Water Monitoring Plan for the North Parcel

FMC Corporation
Former Agricultural Products Group Facility
Baltimore, Maryland

Environmental Resources Management, Inc. (ERM)
180 Admiral Cochrane Drive
Suite 400
Annapolis, MD 21401

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ATTACHMENT A MDE WELL ABANDONMENT FORM

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ATTACHMENT C ALTERNATE SAMPLING METHODS

Acronyms and Abbreviations

Name	Description
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DO	Dissolved Oxygen
DQO	Data Quality Objective
ERM	Environmental Resources Management
FDRTC	Final Decision and Response to Comments
FMC	FMC Corporation
GWMP	Ground Water Monitoring Plan
HASP	Health and Safety Plan
MCL	Maximum Concentration Level
mL/min	Milliliter per Minute
mV	Millivolts
NAPL	Non-Aqueous Phase Liquid
ORP	Oxidation/Reduction Potential
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Levels
SMP	Soil Management Plan
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1. INTRODUCTION

On behalf of FMC Corporation (FMC) and NPD Baltimore Industrial, LLC (NPD), Environmental Resources Management (ERM) has prepared this Ground Water Monitoring Plan (GWMP) for submittal to the United States Environmental Protection Agency (USEPA) with respect to the former FMC property at 1600 East Patapsco Avenue, Baltimore, Maryland. The North Parcel (1600 East Patapsco Avenue) consists of the approximately 22-acre portion of the 90-acre property (Site) (Figure 1). This GWMP replaces the 19 October, 2016 document titled Ground Water Monitoring Plan for the North Parcel (ERM, 2016) appended to the document titled Corrective Measures Implementation (CMI) Work Plan for the North Parcel (50 Percent Design Submittal) (ERM, 2016a), approved by the USEPA in a letter dated March 28, 2017 (USEPA, 2017). This updated GWMP supports the redevelopment of the approximately 22-acre North Parcel (formerly part of FMC's Agricultural Products Group, with active manufacturing operations having ceased in 2008 and equipment and buildings dismantled and removed in 2008-2009).

This updated GWMP provides the monitoring procedures for collecting water levels and monitoring ground water quality on the North Parcel. A complimentary GWMP for the former Main Parcel (ERM, 2021) describes the monitoring procedures for collecting water levels and monitoring ground water quality on the Main Parcel, which is located at 1701 East Patapsco Avenue.

Corrective measures for the North Parcel were developed in accordance with:

- USEPA's Region III Final Decision and Response to Comments (FDRTC) issued on 14 April 2011 (USEPA, 2011); and
- Section II.B.1 of USEPA's Resource Conservation and Recovery Act (RCRA) Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) issued on 30 January 2013 (USEPA, 2013).

The FDRTC requires that Site-related ground water contamination be controlled to prevent migration onto Site-adjacent properties at unacceptable concentrations (USEPA, 2011). The Corrective Measures Study (CMS) report for the North Parcel was written to be consistent with the remedial objective identified in the FDRTC, and long-term monitoring was selected as part of the remedy for ground water conditions on the North Parcel and off-site properties.

1.1 Background

Two alternatives were discussed in the USEPA-approved CMS for the North Parcel (ERM, 2016b). Alternative 2, which was proposed by FMC and approved by USEPA, includes the following corrective measures:

- Removal and disposal of the source area, consisting of removal of non-aqueous phase liquid (NAPL)-impacted soils. Removal and off-site disposal of source area soils was completed in November 2019 through January 2020;
- Placement of a low permeability cover (i.e., asphalt cap) on the six-acre northern portion of the North Parcel to reduce infiltration of rainwater into the subsurface;
- Long-term ground water monitoring of select on-site and off-site wells; and
- On-site and off-site institutional controls.

The current scope of the annual ground water monitoring program is described in the GWMP for the North Parcel (ERM, 2016a). The current ground water monitoring program consists of three elements:

- Water Level Monitoring. Ground water elevations are measured at up to 32 wells; ten wells in the perched zone, 20 wells in the shallow zone, and two wells in the intermediate zone.

- Ground Water Quality Data Collection and Analysis. There are 22 wells located on the North Parcel sampled on an annual basis. The ground water quality monitoring network includes six wells in the perched zone, 14 Pleistocene monitoring wells (shallow) and two Patapsco monitoring wells (intermediate and deep). Samples are collected and analyzed for 34 volatile organic compounds (VOCs).
- Data Evaluation. Ground water elevation contour maps for the perched and shallow ground water flow zones depict the groundwater flow contours. The ground water quality data collected annually is evaluated using temporal trend plots. The data evaluation is provided in an annual report submitted to USEPA in the subsequent January of each year.

Between 31 October and 7 November 2018, 63 monitoring wells located on the North Parcel and adjacent Dana property were abandoned in preparation for the transfer of the North Parcel for potential redevelopment (ERM, 2019). Two wells on the Dana property, MW-56 and MW-56P, were abandoned after a tenant on the property damaged the wells during cleanup of a spill in early 2018. Well MW-56P was abandoned; however, well MW-56 could not be located and a notification of the missing well was made to MDE and the Baltimore City Health Department in accordance with MDE requirements. As indicated in the Annual Progress Report for 2018 submitted to the USEPA in January 2019, sampling of these wells was replaced by nearby wells MW-58 and MW-58P to allow for continued monitoring of groundwater elevation and quality on the Dana property (ERM, 2019a).

Historical ground water quality data for the North Parcel and surrounding off-site wells was presented in the CMS for the North Parcel and has been presented in annual site-wide ground water monitoring reports.

This GWMP presents modifications to the long-term ground water monitoring of select on-site monitoring wells to support the redevelopment of the property.

1.2 Purpose

This GWMP contains slight revisions to the plan presented in the 2016 GWMP for the North Parcel (ERM, 2016). Ground water monitoring for the Main Parcel is described in the GWMP for the Main Parcel updated in March 2021 to support the redevelopment of that property (ERM, 2021). The purpose of the long-term monitoring is to monitor changes in ground water quality in the perched and shallow water tables over time. Long-term monitoring will consist of annual ground water sampling of an on-site and off-site monitoring well network.

This long-term ground water monitoring plan includes the following:

- Identification of the long-term ground water monitoring well network for the North Parcel, and adjacent Dana and Fleet properties (Figure 2).
- Abandonment procedures for three monitoring wells that will be impacted due to the planned redevelopment activities.
- Protection methods for four monitoring wells located within the limits of disturbance of the planned redevelopment activities.
- Installation methods for two new monitoring wells to be installed and included in the monitoring well network.
- The proposed annual frequency of sample collection and the procedures to be used to collect and analyze ground water samples.
- Quality Assurance/Quality Control (QA/QC) procedures associated with collection of the ground water samples from the monitoring wells.

- Description of the data analysis and reporting.

1.3 Organization

The remainder of this long-term monitoring plan is organized as follows:

- Section 2 – Monitoring Well Abandonment. This section identifies the locations and abandonment methods for monitoring wells impacted by redevelopment at the North Parcel.
- Section 3 – Monitoring Well Installation and Protection. This section identifies the locations and installation methods for new monitoring wells to complete the ground water monitoring network at the North Parcel. Additionally, this section describes the protection of existing wells located within the redevelopment's limits of disturbance
- Section 4 – Sample Collection and Analysis. This section identifies the water level monitoring network and water level measurements. In addition, the section describes the procedures for the collection and analysis of ground water quality samples to monitor ground water quality on the North Parcel.
- Section 5 – Quality Assurance Project Plan. This section includes the QA/QC procedures for the monitoring program.
- Section 6 – Data Evaluation and Reporting. This section describes the methods to evaluate and report the water level and ground water quality data.
- Section 7 – Project Management. This section describes the roles and responsibilities of the parties, schedule, and health and safety considerations for implementing the ground water monitoring.

2. MONITORING WELL ABANDONMENT

Table 1 identifies the three monitoring wells on the North Parcel to be protected, proposed for abandonment, or abandoned and reinstalled for future monitoring. Wells located within the proposed redevelopment footprint will be abandoned and/or relocated. Wells located outside the planned footprint but within the construction's limits of disturbance will be protected. Monitoring well MW-49 is currently only used for water level monitoring and will not be replaced. Figure 2 displays the proposed well relocation plan.

Well abandonment will be conducted in accordance with the Maryland Department of the Environment's (MDE) well abandonment regulations (COMAR 26.04.04.34). In summary, well abandonment will be conducted using the following methods:

- Wells will be abandoned and/or sealed by a well driller licensed by the Maryland State Board of Well Drillers.
- A Water Well Abandonment Sealing Report (Attachment A) will be completed for submittal not later than 45 days after abandonment and sealing of the well.
- Suitable materials for sealing a well include concrete, neat Portland cement grout, a mixture of Portland cement and sand, and bentonite.
- Prior to sealing the well, it should be inspected to determine its condition and to determine if any obstructions are present that would interfere with sealing the well.
- The surface casing will be removed and if able, the PVC well casing will be pulled from the ground.
- If the PVC casing cannot be pulled out, it will be cut off at the ground surface and the well casing shall be filled with sealing material.
- The annular and/or interior space will be sealed so that it will not act as a channel for interchange of waters.
- If the well casing is removed, the entire length of the borehole shall be filled with sealing material.

3. MONITORING WELL INSTALLATION AND PROTECTION

3.1 Monitoring Well Installation

Two new shallow monitoring wells will be added to the existing monitoring well network to replace wells that are abandoned. Figure 2 shows the locations of the proposed replacement wells. The new shallow monitoring wells will be designated with an “R” to indicate a replacement well, as follows:

- MW-20R, and
- MW-26R.

The new shallow wells will be installed to depths consistent with the existing wells, approximately 28 feet for well MW-20R and 20 feet for well MW-26R, with five feet of well screen. New wells will be installed by a Maryland-licensed well driller and in accordance with the requirements of COMAR 26.04.04 and all other applicable regulations. The wells will be drilled using hollow-stem auger methods and constructed using 2-inch diameter PVC machine-slotted screen and riser. A field geologist will oversee well installations and examine cuttings to generate a log of observations. The borehole annulus will be filled with an appropriately sized sand pack, bentonite seal and grout to the ground surface. The wells will be completed with a lockable cap inside a 12-inch diameter manhole constructed flush to grade with a secure, protective cover.

After completion, each well will be developed by pumping and surging water from the well until development water is clear and free of fine-grained sediment to the satisfaction of the field geologist. Well locations will also be surveyed for horizontal and vertical location using the existing site datum by a Maryland-licensed surveyor.

3.2 Monitoring Well Protection

Monitoring wells MW-25, MW-39, MW-40, MW-50 and MW-51P are located within the currently planned redevelopment paving. To protect these wells during construction activities the contractor will install high visibility fencing or a three-foot tall 24” diameter PVC casing (“stick-up”) around the wells. Following completion of the construction activities, the monitoring wells will be completed inside a 12-inch diameter manhole constructed flush to grade with a secure, protective cover and lockable well cap.

Monitoring wells MW-24, MW-24A, MW-24C, MW-36, MW-46, MW-47, MW-48 are located in an area that is proposed to be landscaped. Each of these wells will be modified to be inside a 12-inch diameter manhole constructed flush to grade with a secure, protective cover and lockable well cap.

4. SAMPLE COLLECTION AND ANALYSIS

4.1 Monitoring Well Network

The ground water monitoring system will consist of select ground water monitoring wells located on the North Parcel, Dana, and Fleet properties. The condition of the monitoring wells to be retained for the long-term monitoring program will be inspected, and the results of the inspection will be recorded on the Monitoring Well and Security Inspection form included in Attachment B. Repairs to the monitoring well network will be made as necessary. This form will be filled in each year during the annual monitoring event to determine if well repairs are necessary.

4.1.1 Water Level Monitoring

A total of 32 wells have been identified for ground water elevation monitoring; 10 wells in the perched zone, 20 wells in the shallow zone, and two wells in the intermediate zone. The monitoring well network for water level monitoring is listed below. Figure 2 shows the locations of the wells proposed for inclusion in the ground water level monitoring program. Table 2 presents the well construction details. Figures 3 and 4 present the ground water flow contours for the perched and shallow flow zones, respectively.

Perched Wells	Shallow Wells	Intermediate Wells
MW-51P, 53P, 54P, 55P, 57P, 58P, 59P, 60P, 61P, 62P	MW-20R, 24, 25, 26R, 36, 39, 40, 46, 47, 48, 50, 53, 54, 55, 57, 58, 59, 60, 61, 62	MW-24A, 24C

4.1.2 Ground Water Quality

A total of 22 wells have been identified for ground water quality monitoring; 6 wells in the perched zone, 14 wells in the shallow zone, and two wells in the intermediate zone. The monitoring well network for ground water quality monitoring is listed below. Figure 2 shows the locations of the wells proposed for inclusion in the ground water quality monitoring program. Table 2 presents the well construction details.

Perched Wells	Shallow Wells	Intermediate Wells
MW-51P, 53P, 54P, 55P, 57P, 58P	MW-20R, 24, 25, 26R, 36, 39, 40, 48, 50, 55, 57, 58, 59, 60	MW-24A, 24C

[1] *The wells listed above will effectively monitor changes in ground water quality on the North Parcel and two off-site properties in both the perched and shallow flow zones.*

4.2 Synoptic Ground Water Elevations

Synoptic water level measurements will be obtained from the wells listed in Section 4.1.1 at the start of the sampling event to determine the ground water flow direction and hydraulic gradient. Water levels will be measured using a water level meter. The measurements will be collected to the nearest 0.01 foot relative to the top of the well casing.

4.3 Well Purging and Sampling

Ground water samples will be collected annually from the list of wells presented in Section 4.1.2. Purging of monitoring wells will be performed following the soda straw method (USEPA, SESDPROC-301-R3, March 6, 2017, Page 24) and the USEPA low-flow ground water sampling procedures (USEPA, 1996). The procedures for low flow purging and sampling to be used for all monitoring wells is as follows:

4.3.1 Peristaltic Pumps

1. Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.
2. Polyethylene tubing will be used to purge the wells. The tubing will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.
3. When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 milliliters per minute (mL/min)) to minimize disturbance of the water column.
4. The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.1 meters of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.1 meters, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.1 meters when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low flow/minimum drawdown protocol.
5. When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval to begin with.
6. Using a flow-through cell, measurements of field parameters [pH, temperature, conductivity, oxidation-reduction potential (ORP), turbidity and dissolved oxygen (DO)] will be collected at 5-minute intervals during purging of the monitoring well, until stabilization occurs. The flow cell may be emptied as necessary to prevent turbidity build-up in the flow cell.
7. Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
    - +0.1 units for pH,
    - +10% for temperature,
    - + 3% for conductivity,
    - +10 millivolts (mV) for ORP, and
    - +10% for turbidity and DO.
8. Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case that the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then all samples but VOCs will be collected at that time.
9. VOCs will be sampled using the Soda Straw Method. Tubing will be allowed to fill using the peristaltic pump, the pump speed will be reduced, and then the flow is reversed to push the water out of the tubing. The tubing is brought to the surface and the water in the tubing is allowed to fill the VOA vials. Avoid completely filling the tubing to avoid contact with the flexible pump head tubing. The method will be repeated until all the VOC's sample containers are filled.

4.3.2 Submersible Pumps

1. Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.

2. A low-flow submersible pump and polyethylene tubing will be used to purge the wells. The pump will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.
3. When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 mL/min) to minimize disturbance of the water column.
4. The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.1 meters of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.1 meters, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.1 meters when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low flow/minimum drawdown protocol.
5. When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval to begin with.
6. Using a flow-through cell, measurements of field parameters [pH, temperature, conductivity, ORP, turbidity and DO] will be collected at 5-minute intervals during purging of the monitoring well, until stabilization occurs. The flow cell may be emptied as necessary to prevent turbidity build-up in the flow cell.
7. Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
    - +0.1 units for pH,
    - +10% for temperature,
    - + 3% for conductivity,
    - +10 mV for ORP, and
    - +10% for turbidity and DO.
8. Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case that the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then samples will be collected at that time.

4.3.3 Alternate Sampling Methods

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.1 m of drawdown. In these cases, a modified low flow method (depending on the water level in relation to the well screen) would be utilized as presented in Attachment C.

4.4 Sample Analysis

The ground water samples will be submitted to the laboratory for analysis of the target compound list (TCL) VOCs via EPA Method 8260 as identified in Table 3. Table 4 summarizes the number of proposed samples, including QA/QC samples, and the field and laboratory analysis.

4.5 Field Decontamination

All non-dedicated sampling equipment will be cleaned after each use with a non-phosphate detergent/tap water solution, rinsing with tap water, followed by a distilled or deionized water rinse.

All non-dedicated purging and sampling equipment will be decontaminated in the field prior to beginning purging and sampling activities, after use in each well, and prior to leaving the Site. Purging and sampling equipment will be decontaminated using an Alconox wash and a distilled water rinse.

Submersible pumps will be decontaminated by pumping or by breaking down the pump and cleaning the interior of the pump with a decontamination solution. If an Alconox solution is pumped through the pump, the outside of the pump will then be cleaned and scrubbed with a bristle brush and then the pump rinsed with a distilled water rinse. If the pump is broken down, the interior and the exterior of the pump will be sprayed with an Alconox wash and then scrubbed with a bristle brush. The pump will then be rinsed with distilled water.

4.6 Management of Investigation-Derived Waste

Water generated during purging and decontamination fluids will be contained and placed into the on-site ground water treatment plant for treatment.

Any disposable equipment or equipment that cannot be decontaminated or is designated for one-time use (e.g., tubing) will be containerized separately and disposed in the general trash.

4.7 Management of Sampling Records and Field Data

The field sampling team is responsible for maintaining records and notes of all activities. A field notebook shall be maintained by the sampling team describing all sampling activities and observations. This includes, but is not limited to field equipment calibration, description of all samples collected, field screening results and measurements, date and time of sampling and purging activities, any Site visitors, any problems or downtime, and date and time of sample delivery to the laboratory. Each entry in the book should be made in indelible ink. If an error is made, it is to be lined through, initialed, dated and the correct entry made. At the end of the day, or when a field notebook changes between members of the sampling team, it is to be noted and signed. In addition, field sheets will be utilized to record purging activities and measurements at each monitoring well.

4.8 Sample Handling and Shipment

Sample containers will be obtained directly from the laboratory. Immediately after collecting each sample, the sample container will be labeled, sealed in an individual plastic bag, and placed into an insulated cooler containing ice. Chain-of-custody forms will accompany the samples inside the cooler for delivery to the off-site laboratory. A sampling team member will indicate relinquishment of the samples on the chain-of-custody form, and these forms will be sealed in a “Ziploc” plastic bag, or a laboratory supplied sample bag and inserted into the cooler before sealing the cooler for shipment. Each cooler will contain sufficient ice to ensure that the proper temperature is maintained during shipment and will be packed in a manner to prevent damage to sample containers. Samples will be shipped via commercial delivery service for overnight delivery or courier to the off-site analytical laboratory.

The following information will be recorded on the chain-of-custody forms:

- Project name
- Sample identification numbers

- Sample type
- Date and time of collection
- Analyses to be performed and preservatives
- Number of sample containers
- Shipping method (carrier airbill number, if applicable)
- Name of recipient laboratory
- Signatures of parties relinquishing and receiving the sample cooler at each transfer point.

Custody of samples must be maintained and always documented. The sampling team will be responsible for ensuring that the chain-of-custody is maintained, and each sample transfer is documented until the samples are shipped to the off-site laboratory.

Laboratory-supplied sample containers will be used. Sample containers will be stored in a locked and secure area. All necessary chemical preservatives will be added, as appropriate, to the bottles by the laboratory prior to shipping the sample containers. Preservative type and source will be documented in the sampling team field book.

The field team will affix a self-adhesive label to each container before collecting samples if a label is not already affixed to the laboratory-supplied sample container. At a minimum, the sample label will contain the following:

- Client – Project Name
- Sample identification number
- Date and time of sample collection
- Sampler's initials
- Analyses to be performed
- Preservatives added.

5. QUALITY ASSURANCE PROJECT PLAN

5.1 Data Quality Objectives

The overall Data Quality Objective (DQO) for the long-term ground water sampling is to provide data of sufficient quality to determine whether VOCs are present in ground water using analytical methods specified herein. To meet this DQO, definitive quantitation of the concentrations of constituents in ground water by the analytical laboratory is needed for at least 95 percent of the samples. If quantitation for less than 95 percent of the samples is obtained, the project team will make a case-by-case determination as to whether additional samples will be collected and submitted for analysis to replace some or all of the samples that were compromised or consumed without usable data being generated.

5.2 Quality Assurance and Quality Control Samples

QA/QC samples will be collected and analyzed to verify that the data are acceptable. QA/QC samples will be collected at a minimum rate of 1 per 20 samples during the ground water monitoring event. Table 4 lists the proposed number and types of QA/QC samples proposed for collection during each ground water monitoring event.

5.3 Reporting Limits

Table 5 provides the reporting limits for water analysis that should be achieved for each of the parameters to be analyzed and compares the reporting limits to the USEPA's Regional Screening Level (RSL) for tap water and the USEPA maximum concentration level (MCL) (USEPA, 2020). Although Table 5 indicates that in a few instances the reporting limits for selected VOCs are higher than the current USEPA screening level, reporting limits are sufficient for key contaminants, such as chlorobenzene. Additionally, the laboratory can report results to the method detection limit with the use of a "J" qualifier; method detection limits are generally five to ten times lower than the reporting limit. The reporting limits listed in Table 5 will be provided to the selected laboratory to make sure the reporting or method detection limits will be equal to or lower than those listed in Table 5.

6. DATA ANALYSIS AND REPORTING

Ground water monitoring reports will be prepared for submittal to USEPA. The report will summarize data collected, which will be compiled and evaluated. The report will also contain copies of the laboratory analytical reports, chain-of-custody forms, a brief discussion of the data evaluation, conclusions and recommendations and will be appended with ground water flow contour maps for the shallow and perched flow zones.

7. PROJECT MANAGEMENT

7.1 Project Team

Key roles of the team that will perform the work described herein are:

- FMC Corporation – FMC is responsible for performing long-term ground water monitoring. FMC is directly responsible for the implementation of the long-term ground water sampling. The FMC Project Manager will be Mr. Brian McGinnis.
- Monitoring Contractor – Parsons will be responsible for implementing this plan, including the purging, and sampling of the monitoring wells, shipping the samples to the off-site laboratory, and compiling and reporting the data. The monitoring contractor will report directly to FMC.
- Off-site Laboratory – The ground water samples will be analyzed by a qualified laboratory identified and selected by FMC or the monitoring contractor. The off-site laboratory will report directly to the monitoring contractor.

7.2 Health and Safety

FMC recognizes the need to ensure that the work is conducted safely and in accordance with the health and safety procedures established for the Site. During the implementation of the fieldwork described herein, there is the potential for chemical exposures to workers, as well as typical physical hazards associated with the Site work. The health and safety procedures that will be followed during the field investigation will be included in a project-specific Health and Safety Plan (HASP) that covers specific activities associated with ground water sampling. The HASP and any HASP Supplement(s) will conform to Occupational Safety and Health Administration (OSHA) and USEPA requirements including, but not limited to, 29 Code of Federal Regulations (CFR) 1910.120 (Federal Government of the United States, 2009).

7.3 Schedule

Long-term ground water monitoring of the North Parcel will be conducted annually. The North Parcel annual sampling event will likely be conducted concurrent with the annual ground water quality sampling conducted on the Main Parcel. Ground water monitoring results will be summarized in a stand-alone report submitted to USEPA within 60 days of the completion of the sampling.

8. REFERENCES

Environmental Resources Management (ERM). 2016. Appendix D, Ground Water Monitoring Plan for the North Parcel, Corrective Measures Implementation (CMI) Work Plan for the North Parcel (50 Percent Design Submittal), Former Agricultural Products Group Facility, Baltimore, Maryland, dated 19 October 2016.

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Environmental Resources Management (ERM). 2019. Letter from ERM to Mr. Jonathan Bucca, FMC Corporation, Re: North Parcel Well Abandonment Summary, FMC Former Agricultural Products Group (APG) Plant, Baltimore, Maryland, dated 8 January 2019.

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United States Environmental Protection Agency (USEPA). 1996. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures. Prepared by Robert W. Puls and Michael J. Barcelona. Office of Solid Waste and Emergency Response. EPA/540/S-95/504, April 1996.

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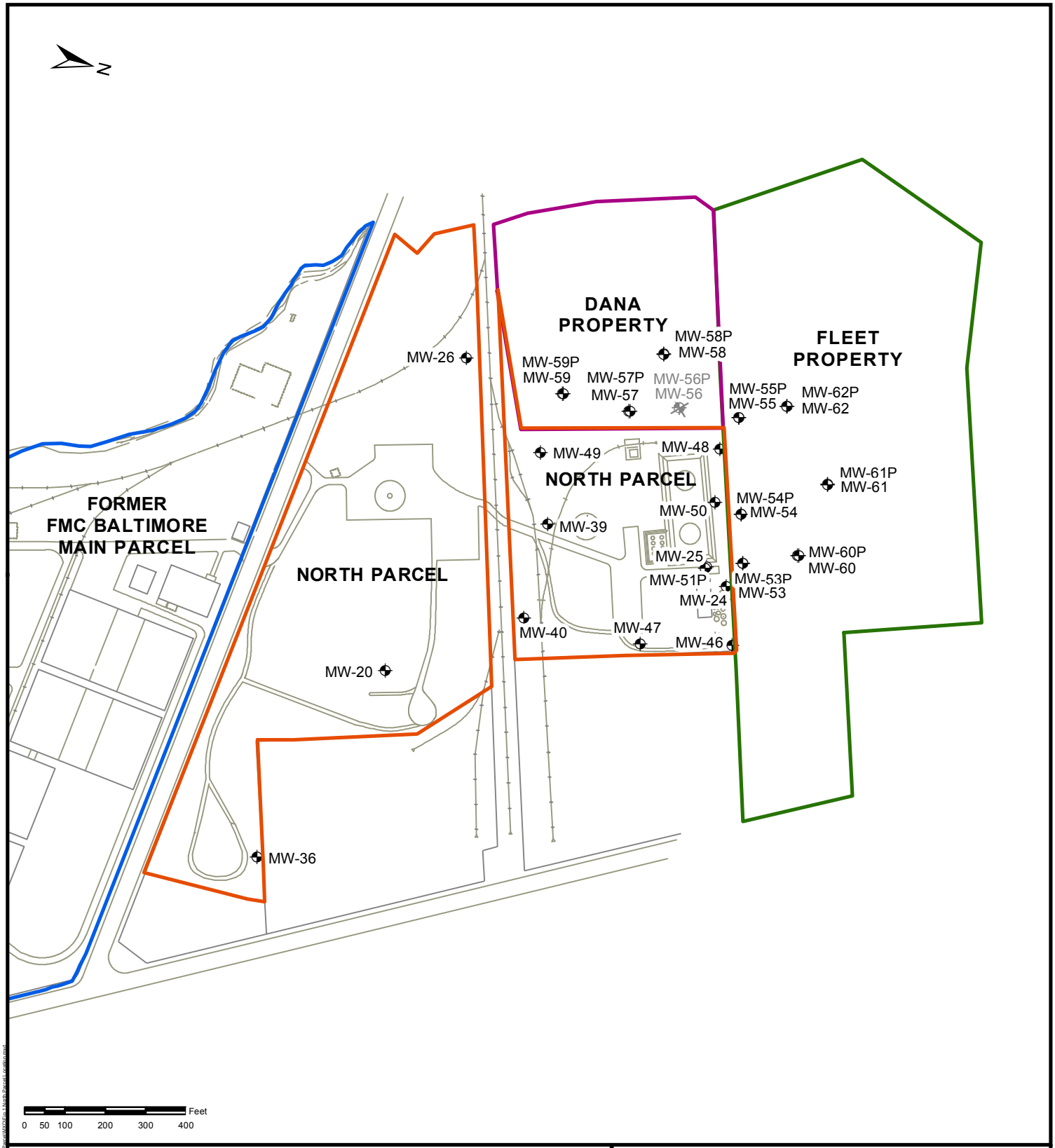
United States Environmental Protection Agency (USEPA). 2013. Permit for Corrective Action, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, January 30, 2013.

United States Environmental Protection Agency (USEPA). 2017. Groundwater Sampling, SESDPROC-301-R4. Region 4, USEPA, Science and Ecosystem Support Division. April 26, 2017, Page 24.

United States Environmental Protection Agency (USEPA). 2020. Regional Screening Levels RSLs. https://semspub.epa.gov/work/HQ/200055.pdf.

FIGURES



LEGEND

- Monitoring Well Location
- Damaged Monitoring Well Location
- Former FMC Main Parcel Property
- Former FMC North Parcel Property
- Dana Property
- Fleet Property

Source: Parsons, 2021 Annual North Parcel GW Monitoring Report

SITE MAP
FORMER FMC BALTIMORE NORTH PARCEL AND OFF-SITE LOCATIONS

FMC

FORMER AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

PROJECT #:	DATE:	DWN:	CHKD:	FIG #:
	1/23/2019			1

LEGEND-NORTH PARCEL

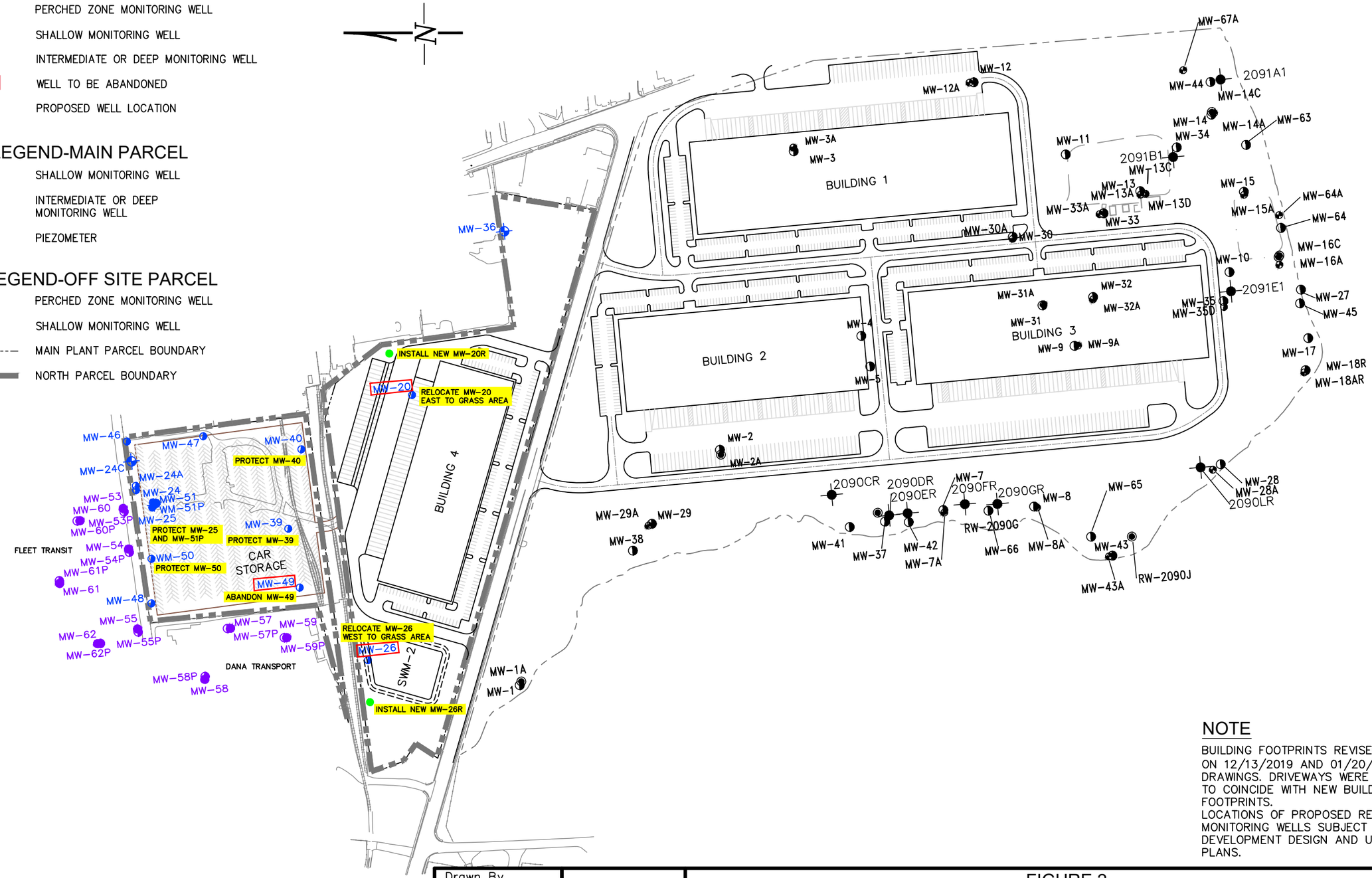
- PERCHED ZONE MONITORING WELL
- SHALLOW MONITORING WELL
- INTERMEDIATE OR DEEP MONITORING WELL
- MW-# — WELL TO BE ABANDONED
- PROPOSED WELL LOCATION

LEGEND-MAIN PARCEL

- SHALLOW MONITORING WELL
- INTERMEDIATE OR DEEP MONITORING WELL
- PIEZOMETER

LEGEND-OFF SITE PARCEL

- PERCHED ZONE MONITORING WELL
- SHALLOW MONITORING WELL
- MAIN PLANT PARCEL BOUNDARY
- NORTH PARCEL BOUNDARY



NOTE

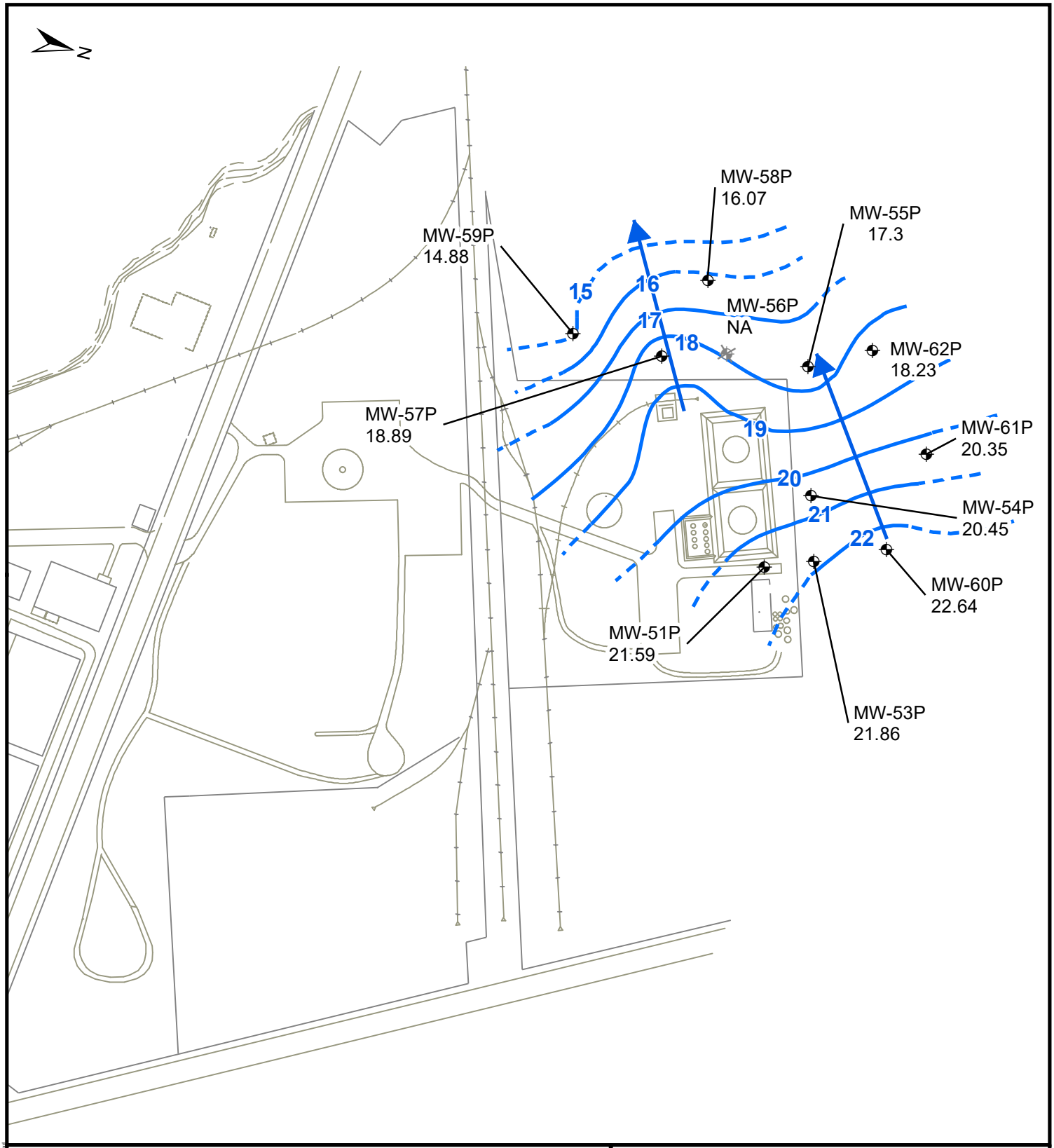
BUILDING FOOTPRINTS REVISED BASED ON 12/13/2019 AND 01/20/2022 DRAWINGS. DRIVEWAYS WERE SHIFTED TO COINCIDE WITH NEW BUILDING FOOTPRINTS.
LOCATIONS OF PROPOSED REPLACEMENT MONITORING WELLS SUBJECT TO FINAL DEVELOPMENT DESIGN AND UTILITY PLANS.

Drawn By	CAK
CADD Review	--
Date Drawn/Rev'd	07/08/2022

ERM®

FIGURE 2
MONITORING WELLS PROPOSED FOR ABANDONMENT OR RELOCATION DUE TO REDEVELOPMENT ACTIVITIES
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

CAD FILE: T:\DWG\AutoCAD\dwg\0587057\0587057_abandoned Wells.dwg PLOT DATE/TIME: 7/8/2022 11:33 AM



LEGEND

- Perched Zone Monitoring Well
- Damaged Perched Zone Monitoring Well
- Groundwater Surface Elevation Contour
- Inferred Groundwater Surface Elevation Contour
- Inferred Groundwater Flow Direction

* Value not used in contouring
NM= Not Measured
NA= Not Available, Well Destroyed

Source: Parsons, 2021 Annual North Parcel GW Monitoring Report

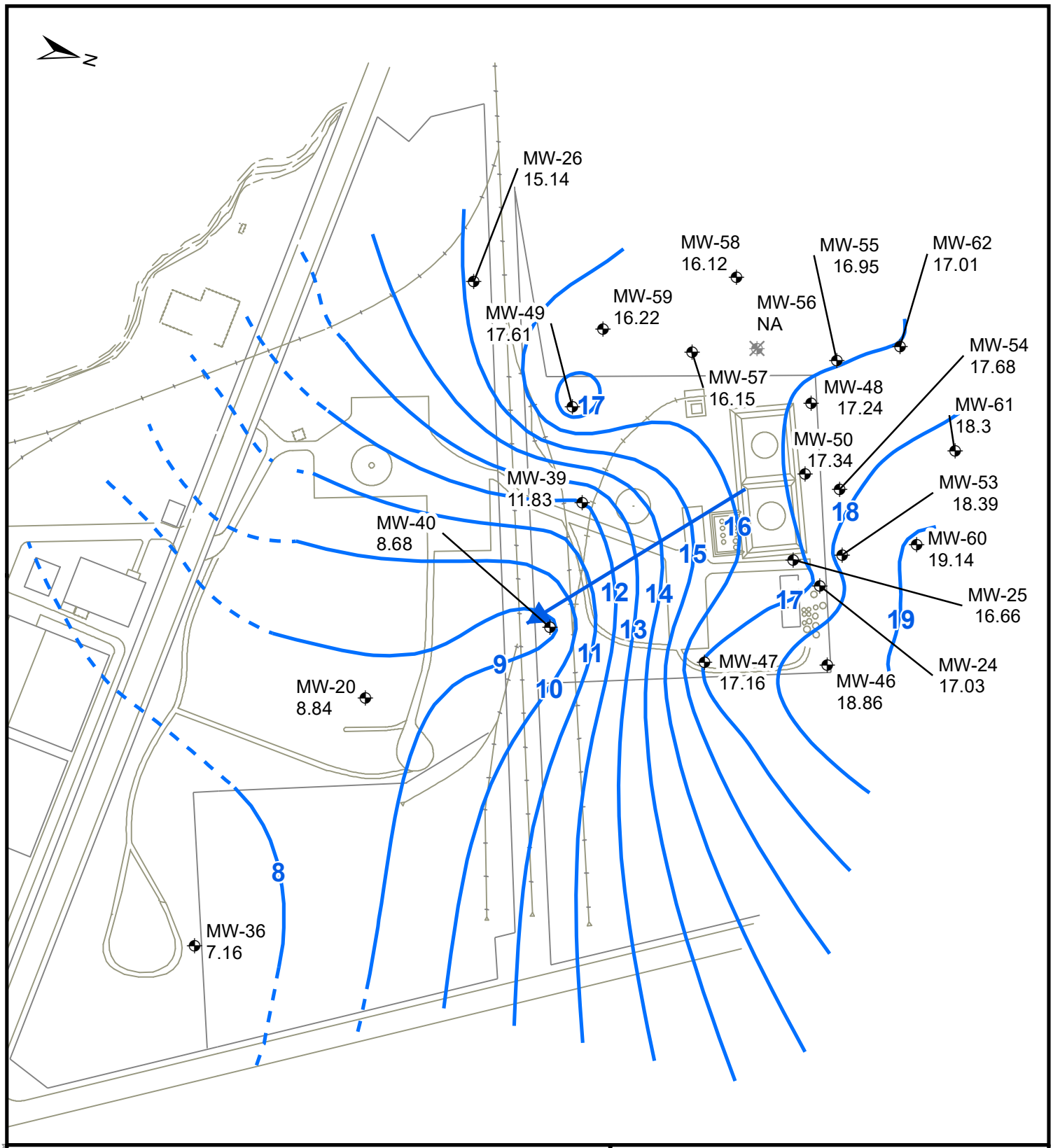
0 50 100 200 300 400 Feet

PERCHED ZONE
GROUND WATER CONTOUR MAP
NORTH PARCEL
SEPTEMBER 15, 2020

FMC

FORMER AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

PROJECT #:	DATE:	DWN:	CHKD:	FIG #:
	1/18/2021			3



LEGEND

- Shallow Monitoring Well
- Damaged Shallow Monitoring Well
- Groundwater Surface Elevation Contour
- Inferred Groundwater Surface Elevation Contour
- Inferred Groundwater Flow Direction

* Groundwater elevation was not used in contouring.
NM= Not Measured
NA= Not Available, Well Destroyed

Source: Parsons, 2021 Annual North Parcel GW Monitoring Report

0 50 100 200 300 400 Feet

SHALLOW (PLEISTOCENE)
GROUND WATER CONTOUR MAP
NORTH PARCEL
SEPTEMBER 15, 2020

FMC

FORMER AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

PROJECT #:	DATE:	DWN:	CHKD:	FIG #:
	12/10/2020			4

TABLES

Table 1
Monitoring Wells to be Protected, Abandoned or Reinstalled due to the Redevelopment Project
FMC Baltimore Former Agricultural Products Group Facility

Well ID	Well Diameter (inches)	TOC Elev. (Jan. 09 Resurvey)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Proposed Action
Perched Monitoring Wells					
MW-51P[1]	4	30.80	10	5 - 10	Protect
Shallow Monitoring Wells					
MW-20[1]	2	26.13	25	20 - 25	Relocate East to Grass
MW-25[1]	2	27.08	21	16 - 21	Protect
MW-26[1]	2	17.57	19	14 - 19	Relocate West to Grass
MW-39[1]	2	26.92	24	14 - 24	Protect
MW-40[1]	2	26.63	23	13 - 23	Protect
MW-49	2	23.28	12	2 - 12	Abandon
MW-50[1]	2	28.18	19	2 - 19	Protect

Notes:
TOC - Top of Casing.
ft bgs - feet below ground surface.
NA - Information not available or not applicable.
[1] - Designates wells that will be sampled.

Table 2
North Parcel Monitoring Well Construction Summary
FMC Baltimore Former Agricultural Products Group Facility

Well ID	Well Diameter (inches)	TOC Elevation (ft msl)	Total Depth (ft bgs)	Total Depth (ft below TOC)	Screen Interval (ft bgs)
Perched Monitoring Wells					
MW-51P	4	30.80	10.1	12.63	5.1 - 10.1
MW-53P	2	21.94	8.0	7.72	6.0 - 8.0
MW-54P	2	21.15	7.0	6.71	2.0 - 7.0
MW-55P	2	19.17	7.4	7.16	2.4 - 7.4
MW-57P	2	20.17	7.3	7.01	2.3 - 7.3
MW-58P	2				
MW-59P*	2	19.83	7.6	7.22	2.6 - 7.6
MW-60P*	2	25.26	11.3	10.95	6.3 - 11.3
MW-61P*	2	25.28	11.3	11.04	6.3 - 11.3
MW-62P*	2	20.63	7.3	6.82	2.3 - 7.3
Shallow Monitoring Wells					
MW-20R	To be installed with target screen interval 20 to 25 ft bgs				
MW-24	2	31.41	26.2	29.00	21.2 - 26.2
MW-24A	2	31.41	49.1	52.00	44.1 - 49.1
MW-24C	2	31.24	116.7	119.00	106.7 - 116.7
MW-25[1]	2	27.08	21.2	20.00	16.2 - 21.2
MW-26R	To be installed with target screen interval 14 to 19 ft bgs				
MW-36	2	24.80	22.8	25.00	12.8 - 22.8
MW-39	2	26.92	23.7	26.00	13.7 - 23.7
MW-40	2	26.63	22.5	25.00	12.5 - 22.5
MW-46*	2	32.40	16.6	20.00	6.6 - 16.6
MW-47*	2	30.58	16.3	19.00	6.3 - 16.3
MW-48	2	27.51	13.6	16.00	3.6 - 13.6
MW-50[2]	2	28.18	19.4	22.00	2.4 - 19.4
MW-53*[3]	2	21.85	25.2	24.80	15.2 - 25.2
MW-54*[3]	2	21.15	23.2	22.95	13.2 - 23.2
MW-55[3]	2	19.11	19.6	19.31	9.6 - 19.6
MW-57[3]	2	20.05	22.2	22.00	12.2 - 22.2
MW-58[3]	2	19.68	19.3	19.00	9.0 - 19.0
MW-59[3]	2	19.87	20.9	20.55	10.9 - 10.9
MW-60[3]	2	25.29	28.6	28.25	18.8 - 18.6
MW-61*[3]	2	25.20	26.2	26.10	16.2 - 26.2
MW-62*[2]	2	20.76	21.5	21.25	11.5 - 21.5

NOTES:

[1] Reference elevation is the updated November 2009 surveyed elevation.
[2] Reference elevation is the updated June 2010 surveyed elevation.
[3] Reference elevation is the updated October 2011 surveyed elevation.
All others are from the January 2009 survey.
* Denotes wells that will be monitored for water level only (no sample collection).
TOC - Top of Casing.
ft msl - feet mean sea level
ft bgs - feet below ground surface.

Table 3
Analytical Methods, Select Compounds and Laboratory Reporting Limits
FMC Baltimore Former Agricultural Products Group Facility

Method	Compound	Proposed Reporting Limit	Proposed Method Detection Limit
VOC (ug/L) EPA 8260			
	Acetone	10	5.0
	Benzene	1.0	0.5
	Bromodichloromethane	1.0	5.0
	Bromoform	1.0	0.5
	Bromomethane	1.0	0.5
	2-Butanone (MEK)	10	5.0
	Carbon disulfide	1.0	0.5
	Carbon tetrachloride	1.0	0.5
	Chlorobenzene	1.0	0.5
	Chloroethane	1.0	0.5
	Chloroform	1.0	0.5
	Chloromethane	1.0	0.5
	Dibromochloromethane	1.0	0.5
	1,1-Dichloroethane	1.0	0.5
	1,2-Dichloroethane	1.0	0.5
	1,1-Dichloroethene	1.0	0.5
	1,2-Dichloropropane	1.0	0.5
	cis-1,3-Dichloropropene	1.0	0.5
	trans-1,3-Dichloropropene	1.0	0.5
	Ethylbenzene	1.0	0.5
	2-Hexanone	5.0	2.5
	4-Methyl-2-pentanone(MIBK)	5.0	2.5
	Methylene chloride	1.0	0.5
	Styrene	1.0	0.5
	1,1,2,2-Tetrachloroethane	1.0	0.5
	Tetrachloroethene	1.0	0.5
	Toluene	1.0	0.5
	1,1,1-Trichloroethane	1.0	0.5
	1,1,2-Trichloroethane	1.0	0.5
	Trichloroethene	1.0	0.5
	Vinyl chloride	1.0	0.5
	Xylene (total)	3.0	1.5

NOTES:
Units are micrograms/liter (µg/l)

Table 4
Sampling and Analysis Matrix
FMC Baltimore Former Agricultural Products Group Facility

Matrix	Number of Samples	Number of Trip Blanks	Number of Equipment Blanks	Number of Duplicates	Number of Matrix Spike Samples	Number of Matrix Spike Duplicate Samples	Total Number of samples	Analysis	Analytical Method
Ground Water	22	1	2	2	2	2	31	TCL VOCs	8260

Notes:
Trip blanks are sampled at a rate of one per cooler; therefore, more than one trip blank may be analyzed

Table 5
Comparison of Laboratory Reporting and Method Detection Limits to USEPA's Screening Criteria
FMC Baltimore Former Agricultural Products Group Facility

PARAMETER	Proposed Reporting Limit (µg/l)	Proposed Method Detection Limit (µg/l)	USEPA Screening Criteria*	USEPA Maximum Contaminant Level
TCLs VOCs (µg/l)				
Acetone	10	5.0	14,000	NS
Benzene	1.0	0.5	0.46	5
Bromodichloromethane	1.0	0.5	0.13	80
Bromoform	1.0	0.5	3.30	80
Bromomethane	1.0	0.5	7.50	NS
2-Butanone (MEK)	10	5.0	5,600	NS
Carbon disulfide	1.0	0.5	810	NS
Carbon tetrachloride	1.0	0.5	0.46	5
Chlorobenzene	1.0	0.5	78	100
Chloroethane	1.0	0.5	21,000	NS
Chloroform	1.0	0.5	0.22	80
Chloromethane	1.0	0.5	190	NS
Dibromochloromethane	1.0	0.5	0.87	80
1,1-Dichloroethane	1.0	0.5	2.80	NS
1,2-Dichloroethane	1.0	0.5	0.17	5
1,1-Dichloroethene	1.0	0.5	280	7
1,2-Dichloropropane	1.0	0.5	0.44	5
cis-1,3-Dichloropropene	**1.0**	**0.5**	0.47	NS
trans-1,3-Dichloropropene	**1.0**	**0.5**	0.47	NS
Ethylbenzene	1.0	0.5	1.50	700
2-Hexanone	5.0	2.5	38	NS
4-Methyl-2-pentanone(MIBK)	5.0	2.5	6,300	NS
Methylene chloride	1.0	0.5	11	5
Styrene	1.0	0.5	1,200	100
1,1,2,2-Tetrachloroethane	**1.0**	**0.5**	0.076	NS
Tetrachloroethene	1.0	0.5	11	5
Toluene	1.0	0.5	1,100	1,000
1,1,1-Trichloroethane	1.0	0.5	8,000	200
1,1,2-Trichloroethane	1.0	0.5	0.28	5
Trichloroethene	1.0	0.5	0.49	5
Vinyl chloride	1.0	0.5	0.019	2
Xylene (total)	3.0	1.5	190	10,000

NOTES:
* USEPA Regional Tap Water Screening Levels, May 2020
Units are micrograms/liter (µg/l)
N/A - Standard not available
Bold and Gray Highlight - Reporting Limit and/or Method Detection Limit is above the USEPA Maximum Contaminant Level (MCL), or in the absence of a MCL above the USEPA risk-based screening level.

ATTACHMENT A MDE WELL ABANDONMENT FORM

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard ● Baltimore Maryland 21230
(410) 537-3000 ● 1-800-633-6101 ● http://www.mde.state.md.us

WATER WELL ABANDONMENT-SEALING REPORT FORM

SUBMIT COPIES OF COMPLETED FORM TO:

* COUNTY EVIRONMENTAL AGENCY (contact MDE, WMA if address needed)
* WELL OWNER
* MDE, WATER MANAGEMENT ADMINISTRATION, WELL PROGRAM

DATE WELL ABANDONED: _____ (month/day/year)

* PERMIT NUMBER OF ABANDONED WELL (if any) _____

* PERMIT NUMBER OF REPLACEMENT WELL: _____

* PERSON ABANDONING WELL: _____ WELL DRILLER'S LICENSE NUMBER: _____
CIRCLE: MWD / MSD / MGD

* OWNER'S NAME: _____

* WELL LOCATION:
COUNTY:_____
NEAREST TOWN:_____
TAX MAP_____BLOCK_____PARCEL_____
SUBDIVISION:_____
SECTION:_____LOT:_____
NEAREST ROAD:_____

SITE LOCATION MAP

* TYPE OF WELL BEING ABANDONED:
_____DRILLED _____JETTED
_____BORED _____HAND DUG
_____OTHER (specify)_____

* USE CODE:
_____DOMESTIC _____MUNICIPAL/PUBLIC
_____IRRIGATION _____INDUSTRIAL
_____TEST/OBSERVATION _____GEOTHERMAL

* TYPE OF CASING:
_____STEEL _____PLASTIC
_____CONCRETE _____OTHER (specify)
_____

SIZE OF CASING:_____INCHES IN DIAMETER

DEPTH OF WELL:_____FEET DEEP

WAS ANY CASING REMOVED?____YES _____NO
If yes, length removed, in feet:_____

WAS CASING RIPPED OR PERFORATED? ____YES____NO

LOG OF SEALING MATERIAL

MATERIAL	FEET	
	FROM	TO
VOLUME OF MATERIAL USED		

_____ MWD / MSD / MGS _____
SIGNATURE-MASTER WELL DRILLER OR SUPERVISING SANITARIAN LICENSE# CIRCLE ONE DATE

INSTRUCTIONS

TO: Person Completing "Water Well Abandonment and Sealing Report"

FROM: Waste Water Permits Program, On-Site Systems Division

SUBJECT: Instruction for Completing the "WATER WELL ABANDONMENT AND SEALING REPORT FORM"

DATE: June 1, 2007

GENERAL DISCUSSION:

A well is to considered as "abandoned" when any of the following conditions occur:

A. The well is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical; or,

B. The well has been permanently disconnected from any water supply system or irrigation system.

Once a well is determined to be abandoned, the well shall be sealed to prevent a hazard to the safety and well being of humans or animals and to prevent the interchange of waters of undesirable quality with those waters of desirable quality.

The owner of the well shall notify the Maryland Department of the Environment of the sealing of any well on the form provided within 30 days after sealing the well.

DIRECTIONS FOR COMPLETING REPORT FORM:

1. Fill out the form completely and legibly;

2. Provide the Well Construction Permit Number. This is the number on the 3"x5" metal tag on the wellhead. If the tag is not present or the permit number is not known, write in "unknown";

3. Fill in the location of the property information. The State Assessment and Taxation web site, www.dat.state.md.us, under "Real Property Data Search" can be used to identify the property Tax Map and Parcel information;

4. Draw in the major features on the property, such as buildings, and locate the abandoned and sealed well with reference to the fixed physical features on the property; and,

5. Complete the check box information describing the abandoned and sealed well and include the identification and volumes of the sealing material used.

SUBMITTAL OF THE REPORT FORM:

The original form and copies shall be made and submitted to the MDE, local environmental health agency, the Maryland Geological Survey and the well owner.

Submit the original and Maryland Geological Survey copy to:

Maryland Department of the Environment
Water Management Administration
Waste Water Permits Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1718

Additional copies shall be mailed to the:

1. **Local County Environmental Health Agency; and,**
2. **Well Owner.**

ADDITIONAL INFORMATION:

To obtain a copy of the Well Construction Regulations, COMAR 26.04.04, Abandonment Standards, .11, go to the Division of State Documents web site at www.dsd.state.md.us , under "COMAR Online", search for "26.04.04.11".

If you have any questions please feel free to contact your local county environmental health agency or call Ms. Swatzbaugh, MDE, at 410-537-3784.

REFERENCES:

Code of Maryland Regulations (COMAR), 26.04.04 -Well Construction, Regulation 11 – Abandonment Standards.

Annotated Code of the Public General Laws of Maryland, Environment Article 9-1309.

ATTACHMENT B MONITORING WELL AND SECURITY INSPECTION FORM

MONITORING WELL & SECURITY INSPECTION FORM Monitoring Well ID:	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:
Weather Conditions:	
General Conditions:	

Monitoring Wells	☐ Caps/Locks Missing ☐ Bolts Intact ☐ Casing Damage ☐ Damaged Well Pad ☐ Missing Well ID Number/Marking Comments:
Security	☐ Locks Functioning ☐ Locks Damaged/Missing ☐ Signs Missing/Damaged ☐ Signs Intact/Quality ☐ Fencing Condition (Holes, Damage, Corrosion) Comments:

MONITORING WELL & SECURITY INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Date: Inspector Name (Print): Inspector Signature: Conditions Reported To:

ATTACHMENT C ALTERNATE SAMPLING METHODS

Attachment C – Alternate Sampling Methods

Variations on the Low-Flow Protocol for Low-Yielding Wells

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.1 m of drawdown. In these cases, one of the modified low flow methods (depending on the water level in relation to the well screen) described below will be used. Constant pumping is recommended when implementing these methods; field parameters and water depth will be measured at 5-minute intervals or at the end of every purge cycle, although it may be difficult to obtain stable measurements of certain parameters (i.e., DO, ORP, turbidity).

Alternative Method 1: Less than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at the mid point of the well screen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. Pumping will cease until the water level in the well equilibrates to static conditions. Purging will be repeated in this manner until a minimum of one casing volume is removed from the well. The well will then be allowed to recover sufficient volume to collect the required ground water sample from the midpoint of the screened interval, within 24 hours of the last purging event.

Alternative Method 2: More than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at midscreen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. This will remove at least one-half of a casing volume of water from the well. The well is then allowed 8 hours to recover, after which time a volume of water equal to the casing volume of the screened interval will be removed, removing approximately a full casing volume during the two purging events. Directly following the second purging event, the required ground water sample is to be collected from the midpoint of the screened interval.

Other modifications of the low-flow protocol may be required on a site-specific basis. Low-recharge wells screened across the water table are not amenable to either of the methods described above. Extremely low recharge wells may also not be practical to sample using any of the cited modifications. In this extreme case, the monitoring wells that have been identified as low-yield will be evacuated of all casing water and re-sampled as soon as sufficient recharge has entered the well to provide a sample. Samples for sulfide will be taken last of the bio-related parameters. If there is insufficient water to fill all samples, sulfide will be taken at a later time after the well has recharged. Data from such wells will be qualified to indicate that bias may be present.

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Suite 400
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ERM

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted Electronically

August 7, 2020

Mr. John Hopkins
Land and Chemicals Division (3LC20)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Revised Soil Management Plan (SMP) for the NorthPoint Site Redevelopment
Permit for Corrective Action, EPA ID No MDD 0030781875
FMC Corporation, Former Agricultural Products Group Facility
1600 and 1701 East Patapsco Avenue, Baltimore, Maryland 21226

Dear Mr. Hopkins:

FMC Corporation (FMC) and NorthPoint Development (NorthPoint) are submitting the revised version of the referenced Soil Management Plan (SMP) to the United States Department of Environmental Protection (USEPA) for review.

This revised SMP is provided to address comments two through four provided in your July 10, 2020 letter in response to your review of the May 12, 2020 version of the SMP. Changes to the text of the SMP to address the three comments are shown in bold-underline. In addition, as agreed during our July 23, 2020 conference call to discuss the comments, Appendix B was added to provide an annotated outline for a Health and Safety Plan.

With respect to the first comment in your July 10 letter regarding the inclusion of pesticides and PCBs in Table 1 Soil Standards for Management of On-Site Soil and Fill Material, you agreed in your July 29, 2020 email to remove this comment.

If you have any questions regarding this SMP, please do not hesitate to contact me at (215) 299-6358.

Sincerely,

Jonathan Bucca, P.E.
Remediation Project Manager

Enclosure: Revised Soil Management Plan, Former Agricultural Products Group Facility Baltimore, Maryland

cc: L. Pizarro, EPA
B. Coblentz, Maryland Department of Environment
A. Mace, NorthPoint
D. Groux, FMC
R. Keating, ERM

Prepared for:

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104

And

NorthPoint Development, LLC
4825 NW 41st St #500
Riverside, MO 64150

SOIL MANAGEMENT PLAN

Former Agricultural Products Group Facility Baltimore, Maryland

Revised

August 7, 2020

Project No.: 0542128

The business of sustainability

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APPENDIX A **MDE FILL MATERIAL AND SOIL MANAGEMENT FACT SHEET**
APPENDIX B **OUTLINE FOR HEALTH AND SAFETY PLAN**

Acronyms and Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COCs	Chemicals of Concern
COMAR	Code of Maryland Regulations
CY	Cubic Yards
DRO	Diesel Range Organics
ERM	Environmental Resources Management
FDRTC	Federal Decision and Response to Comments
FMC	FMC Corporation
gpd	Gallons per day
GRO	Gasoline Range Organics
GWMP	Groundwater Monitoring Plan
GWTP	Groundwater Treatment Plant
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HI	Hazard Index
HSWA	Hazardous and Solid Waste Amendments
IDW	Investigation Derived Waste
JHA	Job Hazard Analysis
MDE	Maryland Department of Environment
NIOSH	National Institute for Occupational Safety and Health
NPD	NorthPoint Development, LLC
OSHA	Occupational Safety and Health Administration
POTW	Publicly Owned Treatment Works
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
RSL	Risk Screening Level
SDS	Safety Data Sheets
SMP	Soil Management Plan
SVOCs	Semivolatile Organic Compounds

TAL	Target Analyte List
TCL	Target Compound List
TCR	Target Cancer Risk
THQ	Target Hazard Quotient
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1. INTRODUCTION

On behalf of FMC Corporation (FMC) and NorthPoint Development, LLC (NPD), Environmental Resources Management, Inc. (ERM) has prepared this Soil Management Plan (SMP) for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC property located at 1600 and 1701 East Patapsco Avenue in Baltimore, Maryland (Figure 1, Site). The Site is subject to the Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 11984, 42 U.S.C. Sections 6901 et seq. This SMP replaces the SMP dated July 21, 2010 (ERM, 2010) and approved by the USEPA in a letter dated September 27, 2010 (USEPA, 2010a). This updated SMP will be used to support the redevelopment of the approximately 90-acre FMC property (formerly part of FMC's Agricultural Products Group, with active manufacturing operations having ceased in 2008 and most equipment and buildings dismantled and removed in 2008-2009).

1.1 Background

As part of the corrective action process, FMC submitted a Corrective Measures Study (CMS) for the Energy Answers Redevelopment Parcel (ERM, 2011) to the USEPA on April 17, 2011. Section 1.2 of the CMS identified key elements of FMC's Site-wide remedial strategy designed to accommodate the future use of the Site. One of these elements was the management of the future exposure of construction workers (i.e., any worker who participates in disturbance of soil including, but not limited to, workers performing demolition, construction and subsurface utility activities) to Site soils by requiring the use of a SMP. As part of the remedial strategy applied by USEPA to the Site, USEPA determined the need to conduct earth moving activities under the direction of a SMP to protect construction workers from exposure to Site soils. USEPA communicated its approval of the draft version of the CMS in a letter dated June 7, 2010, that included the statement that "no on-Site activities that involve soil disturbance may take place until a Soils Management Plan is submitted to EPA and MDE [Maryland Department of Environment] for review and approval." The SMP was submitted to USEPA on July 21, 2010 (ERM, 2010) and approved by USEPA in a letter dated September 27, 2010 (USEPA, 2010a).

The selected remedy for the Site was set forth in the Final Decision and Response to Comments (FDRTC) issued by USEPA Region III on April 14, 2011 (USEPA, 2011). FMC is required to implement the remedy through the Permit for Corrective Action (Permit) (USEPA ID No. MDD0030781875) issued by USEPA on January 30, 2013 (USEPA, 2013). In order to protect Site construction workers, USEPA included the requirement to conduct earth moving activities under the direction of a SMP in Part II.B.2.a of the Permit. The Permit requires compliance with the USEPA-approved SMP for all earth moving activities, including construction and drilling on the Facility property. In addition, in accordance with Part II.B.4.a.4 of the Permit, an institutional control requires earth moving activities be conducted under the direction of the SMP; the institutional controls will be included in the Environmental Covenant recorded on the property deed.

1.2 Redevelopment Approach

The FMC property covers about 90 acres and is divided into northern and southern sections by Patapsco Avenue, which transects the property (Figure 1) (referred to as the North Parcel and Main Parcel respectively). In October 2019, FMC entered into an agreement to sell the majority of the property to NPD. NPD is currently proposing to construct three warehouses on the Main Parcel and is considering covering the North Parcel with asphalt for vehicle storage, potentially adding additional buildings in the future. The property to be redeveloped by NPD includes a portion of the Main Parcel property located at 1701 East Patapsco Avenue (comprising approximately 65 acres of the 69.2 acres), and all of the North Parcel property located at 1600 Patapsco Avenue (comprising approximately 22.2 acres). NPD

anticipates conducting the design and procurement phase in 2020 and starting construction in 2021. NPD will demolish the remainder of the existing buildings, with the exception of the Groundwater Treatment Building and adjacent garage. Under the terms of the property-sale agreement, FMC will retain ownership of the Inactive Disposal Area, Stormwater Retention Basin, and the Groundwater Treatment Plant (comprising approximately 4.2 acres of discontinuous land on the Main Parcel, referred to as the retained areas) (Figure 1).

This SMP applies to earth moving activities conducted on the Main Parcel and the 5-acre northern portion of the North Parcel (Figure 1). FMC proposed in the October 22, 2015 document titled *Corrective Measures Study Report for the North Parcel* (ERM, 2015) that the 17-acre southern portion of the North Parcel be excluded from the SMP requirements based on the absence of impacts on the property. USEPA approved this approach when the North Parcel CMS was approved in a letter dated February 8, 2016 (USEPA, 2016). This change to the portion of the Site covered by the SMP will be further documented in the Environmental Covenant recorded for this portion of the North Parcel (Lot 007).

1.3 Purpose and Use

This SMP has been prepared for use during the redevelopment of the Site and post-development to manage the exposure of construction workers to Site soils. The Property Owner will be responsible for implementing this SMP as it pertains to its redevelopment and post-development of the Main Parcel and to the 5-acre northern portion of the North Parcel. As the Property Owner of the retained parcels, FMC will be responsible for implementing this SMP as it applies to those areas. This SMP applies to the Property Owner's representatives (including their engineering and construction contractors and subcontractors), sublease tenants, any other lease tenants, and any corporate successors, or corporate successors of any other lease tenants.

The specific objectives of this SMP are to:

1. Identify the requirements for conducting earth moving activities under the direction of a Health and Safety Plan (HASP; **see Appendix B**) prepared to comply with Occupational Health and Safety Administration (OSHA) regulations, and have earth moving activities conducted by workers trained pursuant to 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response [HAZWOPER]);
2. Establish management procedures to handle and stockpile excavated soil (as necessary) prior to characterization and disposition;
3. Describe sampling and analytical procedures to characterize excavated soil (as necessary) to determine its disposition or future on-Site use;
4. Identify requirements for soil or other materials imported to the Site to support construction; and
5. Describe procedures to be used to manage groundwater encountered in excavations.

This SMP applies to all activities that could cause soil (not including soil that serves as a cap, which will be subject to other requirements described in an O&M plan) to be disturbed, including but not limited to the following:

- Removal of existing slabs and foundation footings;
- Any excavation of soil, including but not limited to:
  - Excavations for removal or installation of underground utilities and subgrade structures;
  - Regrading of soil or excavations to change grade or construct stormwater management controls;

- Drilling of soil borings generating investigation derived waste (IDW) in support of environmental or geotechnical investigations (including for installation of groundwater monitoring or extraction wells); and
- Dewatering if excavations that generate groundwater are required as part of the construction, installation, and/or maintenance of subgrade utilities or structures.

1.4 Plan Organization

The remainder of the SMP is organized as follows:

- Section 2 – Subsurface Conditions. Presents an overview of Site groundwater and soil quality conditions.
- Section 3 – Soil Management. Presents procedures for managing any soil generated by activities covered by this SMP.
- Section 4 – Soil Import Requirements. Provides requirements for soils or other materials brought on Site.
- Section 5 – Excavation Dewatering. Presents procedures for the management of groundwater and surface water encountered in excavations.
- Section 6 – Health and Safety Requirements. Provides the health and safety requirements for personnel working on Site.
- Section 7 – Changes to the SMP. Provides requirements in case of future changes to SMP by property owner.
- Section 8 – Reporting. Describes current reporting requirements for the Site.

2. SUBSURFACE CONDITIONS

2.1 Groundwater

Shallow groundwater on the Main Parcel occurs in a unit defined as the Pleistocene aquifer. This aquifer consists of fill material and the Pleistocene alluvial deposits that locally overlie the deeper Patapsco Formation. A veneer of surface fill exists over much of the Main Parcel consisting of concrete pieces, bricks, assorted rubble, and soil. The thickness of the fill increases from the northern portions of the Site toward Stonehouse Cove and Curtis Bay, ranging from approximately 2.5 to 20 feet thick. Shallow groundwater occurs at the Site in portions of the surficial fill layer and throughout the Pleistocene formation. Together, these layers constitute a shallow water table aquifer referred to as the Pleistocene aquifer. The water table in the Pleistocene aquifer on the Main Parcel is located at depths ranging from 5 to 10 feet below ground surface. Groundwater occurs at depths below 50 feet in the Patapsco aquifer.

As a result of the iterative North Parcel site investigations, geologic and ground water conditions were defined, the source area was delineated, and the on-site and off-site extent of migration of chlorobenzene in the perched and shallow ground water zones was determined (ERM, 2015). A perched aquifer zone is present on the North Parcel, with depths to groundwater ranging from 3 to 7 feet below ground surface. The perched groundwater is on top of a confining clay layer that is present beneath the North Parcel. Shallow groundwater in the North Parcel is present below the clay layer in the Pleistocene aquifer.

The ground water monitoring program on the Main Parcel is performed in accordance with the Groundwater Monitoring Plan (GWMP) included in Appendix C of the Corrective Measures Implementation (CMI) Work Plan for Groundwater Recovery Optimization (ERM, 2017). Groundwater

quality monitoring on the North Parcel is conducted in accordance with Appendix D - Groundwater Monitoring Plan for the North Parcel in the CMI Work Plan for the North Parcel (ERM, 2016a). Ground water quality in the Perched aquifer on the North Parcel and in the Pleistocene and Patapsco aquifers on both parcels is characterized on an annual basis as part of the sampling conducted to monitor the performance of the ground water recovery system. Ground water quality for the Site has been monitored in selected wells for 10 volatile organic compounds (VOCs) and 20 semivolatile organic compounds (SVOCs) since March 1997, which was completed prior to recovery system startup in May 1997. The VOCs and SVOCs analytical list is included in the sampling program contained in Table 1.

Groundwater characterization has identified selected VOCs and SVOCs across the Site in both the shallow and intermediate aquifers. The Comprehensive Groundwater Study Report (ERM, 2016) described the data and findings obtained from the implementation of two years of semiannual groundwater sampling, as well as sediment and pore water sampling conducted in the Site-adjacent water bodies. VOCs detected in ground water include benzene, chlorobenzene, 1,4-dichlorobenzene, ethylbenzene, and methylene chloride. Chlorobenzene was the most consistently detected VOC in ground water across the Site. The SVOCs detected in ground water include phenol, 2-nitrophenol and bis(2-chloroethyl)ether. Groundwater monitoring indicates that chlorobenzene is the main constituent detected in the shallow and perched groundwater zones on the North Parcel.

2.2 Soil

A comprehensive investigation of soil quality was not necessary to characterize soil conditions within the Main Parcel and North Parcel because the Site's groundwater monitoring program identified the presence of chemicals of concern (COCs), including those listed above, sufficient to support the proposed remedial actions of capping the Site and recovering ground water.

3. SOIL MANAGEMENT

The soil management procedures described herein are designed to minimize the amount of soil stockpiling and testing necessary during earth moving activities and to provide for proper characterization and handling procedures for potentially impacted soils. "Potentially impacted soil" shall be identified based on visual observations, olfactory observations, and other applicable field screening methods **(such as volatile vapor monitoring using a photoionization detector or PID)**, and shall be separated for characterization and possible off-Site disposal. Soil that does not show signs of potential impacts based on field observations will be referred to as "assumed unimpacted soil." Figures 2 and 3 provide decision trees specific to the management of on-Site excavated soils for pre- and post-development circumstances.

3.1 Pre-Development

The Pre-Development period is defined as the period prior to completion of the redevelopment, which will be determined based on when the cap installation has been completed in accordance with the CMI Work Plan. During the Pre-Development period, excavated soil will be observed to distinguish the potentially impacted soils through visual inspection (e.g., discoloration, or visual evidence of waste or oily material), olfactory observations (e.g., petroleum or chemical odors), and other appropriate field screening methods **(such as a PID)**. If no observations of potential impact are noted, assumed unimpacted soil can be placed back into the excavation or in an area that will eventually be covered by an engineered cover **(building, asphalt or concrete), or areas covered with clean landscape soil if placed under a marker fabric to separate the unimpacted soil from the overlying clean fill**, installed as part of the redevelopment, in accordance with the USEPA-approved CMI Work Plan.

The PID shall utilize a minimum 10.6 eV bulb and be calibrated in the field in accordance with the manufacturer's requirements. The PID will be used to screen the presence of volatile organic vapors in surface soil or as it is excavated and placed in a stockpile by placing the meter over the soil surface.

All potentially impacted soils and any assumed unimpacted soils the Property Owner wishes to reuse as part of the cap or cover, shall be managed in accordance with the stockpiling and testing procedures outlined below in Section 3.1.1 and described in Figure 2.

Existing building foundations, asphalt, concrete pavement, and vegetation may be removed as part of the redevelopment. Soil will be removed from the underside of demolished masonry, including concrete slabs, foundations, and asphalt pavement to the extent practicable prior to concrete crushing. Soils generated from such activities will be managed in accordance with the procedures for soil described in this section. Concrete masonry materials that are visually clean of soil can be re-used as part of redevelopment either as grading material (below a cap) or as the base for engineered paved caps or can be disposed of off-site in accordance with all applicable laws, regulations and disposal facility requirements. Vegetation with soil attached to it (i.e., the below-ground portion of vegetation) will be managed as soil in accordance with this SMP. Vegetation from above the ground surface can be used on-site without restriction or may be disposed off-site in accordance with all applicable laws, regulations and disposal facility requirements.

3.1.1 Stockpiling and Testing Procedures

Soils that require stockpiling and testing will be staged on plastic sheeting in 500-cubic-yard (CY) or smaller piles and covered until characterized. Soil characterization and disposition requirements are described below. As an alternative to these procedures, soils may be characterized immediately for off-site disposal in accordance with Section 3.1.2.

1. Stockpiled soils shall be characterized by collecting one 10-point composite sample per 500 CY of soil and submitted to an analytical laboratory that is accredited by the nationally recognized National Environmental Laboratory Accreditation Program (NELAP) to analyze soils for the presence of hazardous substances. Each sample shall be analyzed for Target Analyte List (TAL) metals and cyanide (except for calcium, magnesium, potassium and sodium) and Target Compound List (TCL) SVOCs as presented in Table 1. Additionally, three grab samples will be collected and analyzed for TCL VOCs as presented in Table 1. Both sampling methods must include samples biased towards areas that appear potentially impacted based on field observations, if applicable.
2. Soils identified during excavation with characteristics indicating a "hot spot", defined as evidence of free product, drums or containers that pose imminent threat of release, fire or explosion, or with laboratory analytical results that indicate a hazardous substance(s)[1] with concentrations in excess of USEPA industrial soil RSLs at a target lifetime cancer risk (TCR) of 1×10^{-4} or Hazard Index (HI) of 100 (MDE, 2018) must be disposed off-Site. The current "hot spot" screening levels are included on Table 1 for informational purposes. The RSLs upon which these screening levels are based are typically updated by the USEPA biannually, and thus the values listed in Table 1 need to be checked at the time the SMP is implemented.

[1] Hazardous substance means any substance defined as a hazardous substance under §101(14) of the Comprehensive Environmental Response, Compensation and Liability Act or CERCLA, or is defined as a controlled hazardous substance under COMAR 26.14.01.02.

3. Soils that do not require off-site disposal can be placed under the cap constructed in accordance with the CMI Work Plan**, including placed under clean landscape soil under a marker fabric,** or may be evaluated for potential unrestricted onsite reuse per no. 4 below.

4. Evaluation for potential onsite reuse without restrictions: Analytical results shall be compared to MDE's Category 2 - Non-Residential Restricted Use Soil and Fill Material soil standards. Category 2 soils are soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial USEPA soil RSLs for non-carcinogens set at a hazard quotient (HQ) of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$. Current standards can be found on the USEPA's website: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. In addition to the criteria described above, the following Category 2 screening criteria apply for TPH-DRO and TPH-GRO: 620 mg/kg for TPH-DRO and 620 mg/kg for TPH-GRO. These criteria are based upon the MDE non-residential soil cleanup standards set at a HQ equal to 0.1 for TPH published in the MDE Cleanup Standards for Soil and Groundwater, June 2008: Interim Final Guidance (Update No. 2.1). The current MDE Category 2 screening levels are included on Table 1 for information purposes. The RSLs are typically updated by the USEPA biannually, and thus the values listed in Table 1 need to be checked at the time the SMP is implemented. Excavated soil that is determined not to exceed these screening levels may be used on-Site without restrictions (i.e., beneath, as part of, or above the cap).

3.1.2 Off-site Disposal

Any soil to be disposed off-Site will be characterized for disposal purposes in accordance with the provisions of 40 CFR Part 261 and the requirements of the off-Site disposal facility. All trucks hauling soil to an off-Site disposal facility will be covered or at least two feet of freeboard will be maintained between the waste and the top of the truck. For any soil exhibiting hazardous characteristics, the transporter will comply with 40 CFR Part 263.

3.2 Post-Development

After development is complete (i.e., the Post-Development period), excavated assumed unimpacted soil can be placed beneath a cap in the location where it was generated, if possible (i.e., soil must be able to be re-placed under the cap as part of the project generating the soil). **Excavated assumed unimpacted soil can also be placed beneath clean landscape soil under a marker fabric.** If potentially impacted soils are identified**, following the methods described in Section 3.1,** or replacement under a cap is not possible, the excavated soil will be managed in accordance with Section 3.1.1 and/or 3.1.2, and as described in Figure 3.

Stockpiles of soil will be covered by plastic sheeting or other appropriate cover to protect it from dust generation and exposure to rainfall to prevent runoff. Sheeting will be anchored to prevent it from being blown off or torn. Containment measures will be placed around the soil stockpiles to prevent stormwater runoff from leaving the area and run-on from entering the area.

Access to areas used for stockpiling soil will be restricted using fencing, flagging or other suitable means. Any barriers placed around soil piles to restrict access will be placarded, indicating that the enclosure contains soil potentially contaminated with hazardous substances.

4. SOIL IMPORT REQUIREMENTS

Soils imported for the purpose of construction are required to follow the specifications described in MDE's guidance for the import of clean fill. A copy of MDE's guidance is found in Appendix A. The MDE's clean fill guidance incorporates current USEPA RSLs for residential- and industrial-land-use soils and considers beneficial reuse of dredged material. Soil standards depend on the final use of the soil as described

below. Soil sampling in the form of a grab sample and laboratory analysis shall include, at a minimum, TAL metals, TCL VOCs, TCL SVOCs, total petroleum hydrocarbon (TPH), diesel range organics (DRO), gasoline range organics (GRO), TCL pesticides and polychlorinated biphenyls (PCBs). Samples of imported fill shall be collected at a rate of one grab sample per 10,000 CY, and not less than one sample per source area, prior to delivery to the Site to ensure the soil is free of contamination. Virgin stone or rock obtained from a quarry that is provided along with a certification from the quarry that the material is virgin unimpacted material does not require sampling in accordance with this section.

4.1 Import Soil Placed Under Cap

Imported soils which will be used below a cap or under clean fill are required to meet MDE's Category 3 - Restricted Use Soil and Fill Material, Cap Required soil standards (industrial, 10^{-5}, THQ=1). The current MDE Category 3 soil standards are included in Table 2 for information purposes. Category 3 means "soil or fill material that is impacted by any hazardous substance or oil at concentrations less than or equal to the current industrial EPA soil RSLs for non-carcinogens set at a THQ of 1 and carcinogens at a lifetime cancer risk of $1x10^{-5}$" (MDE, 2019). Current USEPA industrial soil RSLs with THQ of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$ can be found at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

In addition to the criteria described above, the following Category 3 TPH screening criteria apply for TPH-DRO and TPH-GRO: 620 mg/kg for TPH-DRO and 620 mg/kg for TPH-GRO. These criteria are based upon the MDE non-residential soil cleanup standards set at a THQ equal to 0.1 for TPH published in the MDE Cleanup Standards for Soil and Groundwater, June 2008: Interim Final Guidance (Update No. 2.1).

4.2 Import Soil Used for Landscaping Cover

Soils which will be used for landscaping and will not be covered are required to meet MDE's Category 2 - Non-Residential Restricted Use Soil and Fill Material soil standards (industrial, 10^{-6}, HQ=0.1). The current MDE Category 2 soil standards are included in Table 2 for information purposes. Category 2 soils are "soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial USEPA soil RSLs for non-carcinogens set at a hazard quotient (HQ) of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$ ". Current standards can be found on the USEPA's website: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

In addition to the criteria described above, the following Category 2 screening criteria apply for TPH-DRO and TPH-GRO: 620 mg/kg for TPH-DRO and 620 mg/kg for TPH-GRO. These criteria are based upon the MDE non-residential soil cleanup standards set at a HQ equal to 0.1 for TPH published in the MDE Cleanup Standards for Soil and Groundwater, June 2008: Interim Final Guidance (Update No. 2.1).

5. EXCAVATION DEWATERING

Groundwater discharged, pumped or otherwise removed from an excavation must be properly managed in accordance with applicable state and federal regulations. Groundwater removed from excavations cannot be discharged to the ground surface, or directly to surface water. Groundwater that is determined to be free of visible gross contamination, such as the presence of a non-aqueous phase liquid, can be directed to the on-Site groundwater treatment plant (GWTP) for treatment in accordance with the volume thresholds stated below and as coordinated with and approved by FMC's GWTP operator. If evidence of gross contamination is observed, water shall be stored in temporary tanks or other containers until sampled in accordance with relevant and appropriate characterization protocols to ensure the liquid is managed in accordance with FMC's GWTP treatment capabilities and applicable laws and regulations.

- Low Volume. Water that flows into or is generated in excavations in amounts less than 5,000 gallons per day will need to be pre-treated for sediment removal (e.g., using bag filtration), and can then be discharged daily to the on-Site GWTP in coordination with FMC's GWTP operator.
- High Volume. Water that flows into or is generated in excavations in amounts greater than 5,000 gallons per day will need to be contained, pre-treated for sediment removal, and stored in temporary tanks pending discharge to the GWTP in coordination with FMC's GWTP operator.

Construction dewatering could be subject to the requirements set forth in COMAR 26.17.06.03, and if the dewatering exceeds the thresholds for duration or amount in the regulation, a water appropriation permit from MDE could be required. The regulatory thresholds for determining if a water appropriations permit is required (at the time this SMP was prepared – regulatory thresholds in effect at the time work is performed will govern) include:

- The duration of the dewatering including any intermittent periods of non-pumping is expected to last for less than 30 calendar days, and
- The appropriation does not exceed an average of 10,000 gallons per day (gpd) on an annual basis.

6. HEALTH AND SAFETY REQUIREMENTS

6.1 HASP

Contractors that encounter soil or ground water during drilling or earth moving activities, and contractors or other representatives working in areas where demolition or construction requires penetration of the ground surface, must work under the direction of a HASP. Minimum requirements for the content of the HASP shall include, but not be limited to the items listed below.

- Prepared in accordance with the requirements of the National Institute for Occupational Safety and Health (NIOSH) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, OSHA regulations (particularly in 29 CFR 1910 and 1926), state and local regulations, and other USEPA guidance. In accordance with the OSHA regulations, a HASP compliant with the referenced OSHA requirements should **be prepared in accordance with the outline provided in Appendix B, and** include the following:
  - Subsurface clearance procedures, including notification to Maryland's one call system;
  - List of key personnel and responsibilities;
  - Records for employee training, medical surveillance and safety equipment requirements, including training in respiratory protection techniques, medical surveillance confirming employee or contractor are determined to be fit-for-duty to wear a respirator, and fit testing with the make and model of respirator to be used;
  - Chemical hazard identification and control, including chemical hazards associated with chemical products used (attach Safety Data Sheet or SDS), and suspected chemicals of concern (COCs) in the proposed drilling locations and proposed action level(s) for upgrading respiratory protection;
  - Procedures for conducting ambient air quality monitoring in the breathing zone (in the work zone and at the perimeter) using direct-reading real-time instruments, including calibration per manufacturer specifications;
  - Physical and biological hazard identification and proposed mitigation measures;
  - Description of personal protective equipment (PPE);

- Decontamination procedures, including procedures for containment and management of fluids and solids;
- Spill prevention and response procedures;
- Procedures for management of investigation derived waste;
- Emergency response procedures including a map of route to the nearest hospital with turn-by-turn instructions;
- Project-specific job hazard analysis (JHAs), including the subcontractor tasks;
- Description of how the requirements of the HASP will be reviewed with Site workers, and the content of daily safety meetings;
- Contact list and phone numbers, including emergency contacts; and
- Acknowledgement signoff page for employees and subcontractors.

- Identification of the Site emergency response procedures and relative responsibilities with respect to these procedures related to any potential fire, explosion, health, safety or other hazards that might be associated with the presence of soil contaminants; and
- Prepared prior to the excavation work and implemented as needed to address worker safety and applicable regulatory requirements (e.g., shoring of excavations, air monitoring, and dust suppression).

6.2 OSHA HAZWOPER Trained Personnel

Construction workers or other contractors, such as an environmental professional, who may contact soil and ground water impacted with hazardous substances must be trained pursuant to 29 CFR 1910.120 (HAZWOPER).

7. SMP MODIFICATIONS

The SMP can be modified with approval from USEPA. Modification of the use controls will require the following steps.

1. The Property Owner will submit a request to FMC for modifications, which will include an explanation as to why modification of the SMP is being requested;
2. FMC, as the Permit holder, will make a request to USEPA for modifications, which will include an explanation as to why the SMP needs to be modified and propose specific modifications to the wording;
3. USEPA may approve the proposed modifications, or may require adjustments to the proposed modifications prior to issuing approval; and
4. Property owner will file a revised Environmental Covenant (with the revised SMP appended) to be recorded on the deed to reflect the updated SMP.

8. REPORTING

FMC submits an Annual Progress Report to the USEPA by January 30 each year, pursuant to Section II of the Permit to summarize progress made on the corrective measures during the year. The annual report includes a summary of activities taken in the prior year to comply with the requirements of the

SMP. The Property Owner is required to submit to FMC, no later than December 31 of each year, a summary of activities conducted to comply with the SMP. The information presented in the Annual Progress Report will describe:

- The locations where construction activities trigger the use of the SMP; and
- Descriptions of the construction activities that were covered under the SMP, including whether the soil was impacted, characterized, reused, or disposed, and the volumes of soil managed in accordance with the SMP.

In addition, the Property Owner (if not FMC) performing the work shall notify FMC within 24 hours of any damage occurring to the caps and prior to initiating any intrusive activities that involves penetration of a constructed cap. Work activities that involve disturbing the cap and soils beneath shall be documented in a Completion Report prepared and submitted by the Property Owner, including such details, at a minimum, as:

- Dates work performed;
- Work location, with maps and figures;
- Description of work activities performed; and
- Documentation that all material was properly handled in accordance with this SMP.

The Completion Report should be submitted to FMC within 60 days of completing the fieldwork.

REFERENCES

ERM, 2010. Soil Management Plan, Former Agricultural Products Group Facility, Baltimore, Maryland, 21 July 2010.

ERM, 2011. Corrective Measures Implementation Plan for the Energy Answers Redevelopment Parcel (50 Percent Design Submittal), 17 February 2011.

ERM, 2015. Corrective Measures Study Report for the North Parcel, Former Agricultural Products Group Facility, Baltimore, Maryland, 2 October 2015.

ERM, 2016. Comprehensive Groundwater Study Report, Former Agricultural Products Group Facility, Baltimore, Maryland, 31 May 2016.

ERM 2016a. North Parcel Corrective Measures Implementation Work Plan, Former Agricultural Products Group Facility, Baltimore, Maryland, 19 October 2016.

ERM, 2017. Corrective Measures Implementation (CMI) Work Plan for Groundwater Recovery Optimization (50 Percent Design Submittal). Former Agricultural Products Group Facility, Baltimore, Maryland, 25 January 2017.

MDE, 2018. State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, Interim Final Guidance, Update No. 3, October 2018.

MDE 2019. Innovative Reuse and Beneficial Use of Dredged Material Guidance Document, Maryland Department of the Environment. December 2019 https://mde.maryland.gov/programs/Marylander/Documents/Dredging/FINAL_IBR_GUIDANCE_12.05.2019_MDE.pdf

USEPA, 2010. Letter from Mr. William Wentworth, USEPA, to Mr. Michael Shannon, FMC, communicating USEPA's approval of the April 27, 2010 CMS Report, June 7, 2010.

USEPA, 2010a. Letter approving the July 2010 Soil Management Plan. 27 September 2015.

USEPA, 2011. Final Decision and Response to Comments, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 14 April 2011.

USEPA, 2013. Permit for Corrective Action, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 30 January 2013.

USEPA, 2016. Letter approving the final version of the North Parcel Corrective Measures Study Report. 8 February 2016.

USEPA, 2019. Regional Screening Levels (RSLs) - Generic Tables. Tables as of November 2019 https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

TABLES

Table 1 - Soil Standards for Management of On-Site Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	Unrestricted On Site Use based on MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material based on $1x10^{-6}$ Cancer Risk and/or Hazard Quotient = 0.1 (mg/kg)[1]	Identification of HotSpot based on USEPA RSLs at $1x10^{-4}$ Cancer Risk and/or Hazard Index = 100 for Industrial Soil Hot Spot (mg/kg)[2]
TCL Volatile Organics			
1,1,1-Trichloroethane	nc	3600	3600000
1,1,2,2-Tetrachloroethane	c	2.7	270
1,1,2-Trichloro-1,2,2-trifluoroethane	nc	2800 (a)	2800000
1,1,2-Trichloroethane	c**	0.63	500
1,1-Dichloroethane	c	16	1600
1,1-Dichloroethene	nc	100	100000
1,2,3-Trichlorobenzene	nc	93 (a)	93000
1,2,4-Trichlorobenzene	c**	26	11000
1,2-Dibromo-3-chloropropane	c	0.064	6.4
1,2-Dibromoethane (EDB)	c	0.16	16
1,2-Dichlorobenzene	nc	930	930000
1,2-Dichloroethane (EDC)	c*	2	200
1,2-Dichloropropane	c**	6.6	1100
1,3-Dichlorobenzene	-	NV	NV
1,4-Dichlorobenzene	c	11	1100
2-Butanone(MEK)	nc	19000	19000000
2-Hexanone	nc	130 (a)	130000
4-Methyl-2-pentanone(MIBK)	nc	14000	14000000
Acetone	nc	67000	67000000
Benzene	c*	5.1	510
Bromochloromethane	nc	63 (a)	63000
Bromodichloromethane	c	1.3	130
Bromoform	c*	86	8600
Bromomethane	nc	3	3000
Carbon Disulfide	nc	350	350000
Carbon Tetrachloride	c	2.9	290
Chlorobenzene	nc	130	130000
Chlorodibromomethane	c	39	3900
Chloroethane	nc	5700	5700000
Chloroform	c	1.4	140
Chloromethane	nc	46	46000
cis-1,2-Dichloroethene	nc	230	230000
cis-1,3-Dichloropropene	c*	8.2 (a)	820
Dichlorodifluoromethane	nc	37 (a)	37000
Ethylbenzene	c	25	2500
Isopropylbenzene(Cumene)	nc	990	990000
m/p-xylene	nc	250	240000
Methyl acetate	nc	120000 (a)	120000000
Methyl Cyclohexane	-	NV	NV
Methyl t-Butyl Ether	c	210	21000
Methylene Chloride	c**	320	100000
o-Xylene	nc	250	280000
Styrene	nc	3500	3500000
Tetrachloroethene	c**	39	10000
Toluene	nc	4700	4700000
trans-1,2-Dichloroethene	nc	2300	2300000
trans-1,3-Dichloropropene	c*	8.2 (a)	820
Trichloroethene	c**	1.9	600
Trichlorofluoromethane	nc	35000 (a)	35000000
Vinyl Chloride	c	1.7	170

Table 1 - Soil Standards for Management of On-Site Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	Unrestricted On Site Use based on MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material based on $1x10^{-6}$ Cancer Risk and/or Hazard Quotient = 0.1 (mg/kg)[1]	Identification of HotSpot based on USEPA RSLs at $1x10^{-4}$ Cancer Risk and/or Hazard Index = 100 for Industrial Soil Hot Spot (mg/kg)[3]
TCL Semivolatile Organics			
1,1'-Biphenyl	nc	20 (a)	20000
1,2,4,5-Tetrachlorobenzene	nc	35 (a)	35000
1,4-Dioxane	c	24 (a)	2400
2,3,4,6-Tetrachlorophenol	nc	2500 (a)	2500000
2,4,5-Trichlorophenol	nc	8200	8200000
2,4,6-Trichlorophenol	c**	82	21000
2,4-Dichlorophenol	nc	250	250000
2,4-Dimethylphenol	nc	1600	1600000
2,4-Dinitrophenol	nc	160	160000
2,4-Dinitrotoluene	c*	7.4	740
2,6-Dinitrotoluene	c*	1.5	150
2-Chloronaphthalene	nc	6000	6000000
2-Chlorophenol	nc	580	580000
2-Methylnaphthalene	nc	300	300000
2-Nitroaniline	nc	800 (a)	800000
2-Nitrophenol	-	NV	NV
3,3'-Dichlorobenzidine	c	5.1	500
3-Nitroaniline	-	NV	NV
4,6-Dinitro-2-methylphenol	nc	6.6 (a)	6600
4-Bromophenyl-Phenylether	-	NV	NV
4-Chloro-3-Methylphenol	nc	8200 (a)	8200000
4-Chloroaniline	c*	11	1100
4-Chlorophenyl-phenylether	-	NV	NV
4-Nitroaniline	c**	110 (a)	11000
4-Nitrophenol	-	NV	NV
Acenaphthene	nc	4500	4500000
Acenaphthylene	-	NV	NV
Acetophenone	nc	12000 (a)	12000000
Anthracene	nc	23000	23000000
Atrazine	c	10 (a)	1000
Benzaldehyde	c*	820 (a)	82000
Benzo(a)Anthracene	c	21	2100
Benzo(a)Pyrene	c	2.1	210
Benzo(b)Fluoranthene	c	21	2100
Benzo(g,h,i)Perylene	-	NV	NV
Benzo(k)Fluoranthene	c	210	21000
Bis(2-Chloroethoxy)Methane	nc	25 (a)	250000
Bis(2-Chloroethyl)Ether	c	1	100
bis(2-Chloroisopropyl)ether	nc	4700 (a)	4700000
bis(2-ethylhexyl)Phthalate	c*	160	16000
Butylbenzylphthalate	c*	1200 (a)	120000
Caprolactam	nc	40000 (a)	40000000
Carbazole	-	NV	NV
Chrysene	c	2100	210000
Dibenzo(a,h)anthracene	c	2.1	210
Dibenzofuran	nc	100	100000
Diethylphthalate	nc	66000	66000000
Dimethylphthalate	-	NV	NV
Di-n-Butylphthalate	nc	8200 (a)	8200000
Di-n-Octylphthalate	nc	820 (a)	820000
Fluoranthene	nc	3000	3000000
Fluorene	nc	3000	3000000
Hexachlorobenzene	c	0.96	96
Hexachlorobutadiene	c*	5.3	530

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Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	Unrestricted On Site Use based on MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material based on $1x10^{-6}$ Cancer Risk and/or Hazard Quotient = 0.1 (mg/kg)[1]	Identification of HotSpot based on USEPA RSLs at $1x10^{-4}$ Cancer Risk and/or Hazard Index = 100 for Industrial Soil Hot Spot (mg/kg)[3]
Hexachlorocyclopentadiene	nc	0.75	750
Hexachloroethane	c*	8	800
Indeno(1,2,3-cd)Pyrene	c	21	2100
Isophorone	c*	2400	240000
m- and p-Cresol (3&4 methylphenol)	nc	8200	8200000
Naphthalene	c*	17	1700
Nitrobenzene	c*	22	2200
N-Nitrosodi-n-propylamine	c	0.33	33
N-Nitrosodiphenylamine	c	470	47000
o-Cresol (2-methylphenol)	nc	4100	4100000
Pentachlorophenol	c	4	400
Phenanthrene	-	2300	NV
Phenol	nc	25000	25000000
Pyrene	nc	2300	2300000
Total Petroleum Hydrocarbons			
Diesel Range Organics (DRO)	-	620	NA
Gasoline Range Organics (GRO)	-	620	NA
Priority Pollutant Metals			
Aluminum	nc	110000	110000000
Antimony	nc	47	47000
Arsenic	c	3	300
Barium	nc	22000	22000000
Beryllium	nc	230	230000
Cadmium	nc	98	98000
Chromium (as Cr+3)	nc	180000	180000000
Cobalt	nc	35 (a)	35000
Copper	nc	4700	4700000
Iron	nc	82000	82000000
Lead	nc	800	1200
Manganese	nc	2600	2600000
Mercury (as methyl)	nc	12	12000
Nickel	nc	2200	2200000
Selenium	nc	580	580000
Silver	nc	580	580000
Thallium	nc	1.2	1200
Vanadium	nc	580	580000
Zinc	nc	35000	35000000
Cyanide	nc	15	15000

Table 1 - Soil Standards for Management of On-Site Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Notes:

TCL - Target Compound List

NV - No Value Available; c = carcinogenic effects; nc = non-carcinogenic effects;

* = nc standard <100x c standard; ** = n standard <10 c standard

[1] - Maryland Department of the Environment (MDE) Category 2 Non-Residential Restricted Use Soil and Fill Material means a soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial USEPA soil Regional Screening Levels (RSLs) for non-carcinogens set at a hazard quotient (HQ) of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$ per the MDE Land Management Administration Fill Material and Soil Management Fact Sheet (MDE, 2017). The RSLs are typically updated by the USEPA biannually, and thus the values listed herein need to be checked at the time the SMP is implemented. Soil Standards are identified in the MDE Cleanup Standards for Soil and Groundwater, Interim Final Guidance (Update No. 3) October 2018, unless otherwise noted.

[2] - The soil management standards defining "Hot Spot" are based on contaminant concentrations that exceed USEPA's current Regional Screening Levels (RSLs) adjusted for a lifetime target cancer risk (TCR) of 1×10^{-4} for carcinogens or Hazard Index (HI) of 100 for non carcinogens per the Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, Interim Final Guidance (Update No. 3), October 2018. The lead direct contact exposure standard is 1200 mg/kg based on typical exposure for non-play areas (EPA - 40 CFR Part 745, 2001).

(a) - No standard is identified in the MDE Cleanup Standards for Soil and Groundwater, Interim Final Guidance (Update No. 3), October 2018 and therefore, value presented is based on the current USEPA industrial soil RSLs. Current USEPA RSLs can be found at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. The RSLs displayed reflect USEPAs RSLs as of November 2019.

Table 2 - Soil Standards for Imported Clean Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material Standards (mg/kg) (a)	MDE Category 3 - Restricted Use Soil and Fill Material, Cap Required Standards (mg/kg) (b)
Volatile Organic Compounds			
1,1,1-Trichloroethane	nc	3600	36000
1,1,2,2-Tetrachloroethane	c	2.7	27
1,1,2-Trichloro-1,2,2-trifluoroethane	nc	2800	28000
1,1,2-Trichloroethane	c**	5	50
1,1-Dichloroethane	c	16	160
1,1-Dichloroethene	nc	100	1000
1,2,3-Trichlorobenzene	nc	93	930
1,2,4-Trichlorobenzene	c**	110	1100
1,2,4-Trimethylbenzene	nc	180	1800
1,2-Dibromo-3-chloropropane	c	0.064	0.64
1,2-Dibromoethane (EDB)	c	0.16	1.6
1,2-Dichlorobenzene	nc	930	9300
1,2-Dichloroethane (EDC)	c*	2	20
1,2-Dichloropropane	c**	6.6	110
1,3-Dichlorobenzene	-	NV	NV
1,3,5-Trimethylbenzene	nc	150	1500 (s)
1,4-Dichlorobenzene	c	11	110
2-Butanone(MEK)	nc	19000	190000
2-Hexanone	nc	130	1300
4-Methyl-2-pentanone(MIBK)	nc	14000	140000
Acetone	nc	67000	670000
Benzene	c*	5.1	51
Bromochloromethane	nc	63	630
Bromodichloromethane	c	1.3	13
Bromoform	c*	86	860
Bromomethane	nc	3	30
Carbon Disulfide	nc	350	3500
Carbon Tetrachloride	c	2.9	29
Chlorobenzene	nc	130	1300
Chlorodibromomethane	c	39	390
Chloroethane	nc	5700	57000
Chloroform	c	1.4	14
Chloromethane	nc	46	460
cis-1,2-Dichloroethene	nc	230	2300
cis-1,3-Dichloropropene	c*	8.2	82
Dichlorodifluoromethane	nc	37	370
Ethylbenzene	c	25	250
Isopropylbenzene(Cumene)	nc	990	9900
m/p-xylene	nc	250	2400
Methyl acetate	nc	120000	1200000
Methyl Cyclohexane	-	NV	NV
Methyl t-Butyl Ether	c	210	2100
Methylene Chloride	c**	320	10000

Table 2 - Soil Standards for Imported Clean Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material Standards (mg/kg) (a)	MDE Category 3 - Restricted Use Soil and Fill Material, Cap Required Standards (mg/kg) (b)
o-Xylene	nc	250	2800
Styrene	nc	3500	35000
Tetrachloroethene	c**	39	1000
Toluene	nc	4700	47000
trans-1,2-Dichloroethene	nc	2300	23000
trans-1,3-Dichloropropene	c*	82	82
Trichloroethene	c**	6	60
Trichlorofluoromethane	nc	35000	350000
Vinyl Chloride	c	1.7	17
Semivolatile Organic Compounds			
1,1'-Biphenyl	nc	20	200
1,2,4,5-Tetrachlorobenzene	nc	35	350
1,4-Dioxane	c	24	240
2,3,4,6-Tetrachlorophenol	nc	2500	25000
2,4,5-Trichlorophenol	nc	8200	82000
2,4,6-Trichlorophenol	c**	210	2100
2,4-Dichlorophenol	nc	250	2500
2,4-Dimethylphenol	nc	1600	16000
2,4-Dinitrophenol	nc	160	1600
2,4-Dinitrotoluene	c*	7.4	74
2,6-Dinitrotoluene	c*	1.5	15
2-Chloronaphthalene	nc	6000	60000
2-Chlorophenol	nc	580	5800
2-Methylnaphthalene	nc	300	3000
2-Nitroaniline	nc	800	8000
2-Nitrophenol	-	NV	NV
3,3'-Dichlorobenzidine	c	5.1	51
3-Nitroaniline	-	NV	NV
4,6-Dinitro-2-methylphenol	nc	6.6	66
4-Bromophenyl-Phenylether	-	NV	NV
4-Chloro-3-Methylphenol	nc	8200	82000
4-Chloroaniline	c*	11	110
4-Chlorophenyl-phenylether	-	NV	NV
4-Nitroaniline	c**	110	1100
4-Nitrophenol	-	NV	NV
Acenaphthene	nc	4500	45000
Acenaphthylene	-	NV	NV
Acetophenone	nc	12000	120000
Anthracene	nc	23000	230000

Table 2 - Soil Standards for Imported Clean Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material Standards (mg/kg) (a)	MDE Category 3 - Restricted Use Soil and Fill Material, Cap Required Standards (mg/kg) (b)
Atrazine	c	10	100
Benzaldehyde	c*	820	8200
Benzo(a)Anthracene	c	21	210
Benzo(a)Pyrene	c	2.1	21
Benzo(b)Fluoranthene	c	21	210
Benzo(g,h,i)Perylene	-	NV	NV
Benzo(k)Fluoranthene	c	210	2100
Bis(2-Chloroethoxy)Methane	nc	250	2500
Bis(2-Chloroethyl)Ether	c	1	10
bis(2-Chloroisopropyl)ether	nc	4700	47000
bis(2-ethylhexyl)Phthalate	c*	160	1600
Butylbenzylphthalate	c*	1200	12000
Caprolactam	nc	40000	400000
Carbazole	-	NV	NV
Chrysene	c	2100	21000
Dibenzo(a,h)anthracene	c	2.1	21
Dibenzofuran	nc	100	1000
Diethylphthalate	nc	66000	660000
Di(2-ethylhexyl)adipate	-	1900	19000
Dimethylphthalate	-	NV	NV
Di-n-Butylphthalate	nc	8200	82000
Di-n-Octylphthalate	nc	820	8200
Fluoranthene	nc	3000	30000
Fluorene	nc	3000	30000
Hexachlorobenzene	c	0.96	9.6
Hexachlorobutadiene	c*	5.3	53
Hexachlorocyclopentadiene	nc	0.75	7.5
Hexachloroethane	c*	8	80
Indeno(1,2,3-cd)Pyrene	c	21	210
Isophorone	c*	2400	24000
m- and p-Cresol (3&4 methylphenol)	nc	8200	82000
Naphthalene	c*	17	170
Nitrobenzene	c*	22	220
N-Nitrosodi-n-propylamine	c	0.33	3.3
N-Nitrosodiphenylamine	c	470	4700
o-Cresol (2-methylphenol)	nc	4100	41000
Pentachlorophenol	c	4	40
Phenanthrene	-	NV	NV
Phenol	nc	25000	250000
Pyrene	nc	2300	23000

Table 2 - Soil Standards for Imported Clean Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material Standards (mg/kg) (a)	MDE Category 3 - Restricted Use Soil and Fill Material, Cap Required Standards (mg/kg) (b)
Total Petroleum Hydrocarbons			
Diesel Range Organics (DRO)	-	620	NA
Gasoline Range Organics (GRO)	-	620	NA
Inorganics			
Aluminum	nc	110000	1100000
Antimony	nc	47	470
Arsenic	c	3	30
Barium	nc	22000	220000
Beryllium	nc	230	2300
Cadmium	nc	98	980
Chromium (as Cr+3)	nc	35	350
Cobalt	nc	35	350
Copper	nc	4700	47000
Iron	nc	82000	820000
Lead	nc	800	8000
Manganese	nc	2600	26000
Mercury (as methyl)	nc	12	120
Nickel	nc	2200	22000
Selenium	nc	580	5800
Silver	nc	580	5800
Thallium	nc	1.2	12
Vanadium	nc	580	5800
Zinc	nc	35000	350000
Cyanide	nc	15	150
Polychlorinated Biphenyls			
Aroclor 1016	c	27	270
Aroclor 1221	c	0.83	8.3
Aroclor 1232	c	0.72	7.2
Aroclor 1242	c	0.95	9.5
Aroclor 1248	c	0.94	9.4
Aroclor 1254	c	0.97	9.7
Aroclor 1260	c	0.99	9.9

Table 2 - Soil Standards for Imported Clean Soil and Fill Material
Former FMC Agricultural Products Group Facility
Baltimore, Maryland

Parameter	Classification	MDE Category 2 - Non-Residential Restricted Use Soil and Fill Material Standards (mg/kg) (a)	MDE Category 3 - Restricted Use Soil and Fill Material, Cap Required Standards (mg/kg) (b)
Pesticides and Herbicides			
Alachlor	c	41	410
Aldrin	c	0.18	1.8
Chlordane	c	7.7	77
Dalapon	nc	2500	25000
DDD	c	9.6	96
DDE, p,p'-	c	9.3	93
DDT	c	8.5	85
Dichlorophenoxy Acetic Acid, 2,4-	nc	960	9600
Dieldrin	c	0.14	1.4
Dinoseb	nc	82	820
Endosulfan	nc	700	7000
Endrin	nc	25	250
Glyphosate	nc	8200	82000
Heptachlor	c	0.63	6.3
Heptachlor Epoxide	c	0.33	3.3
Hexachlorocyclohexane, Alpha-	c	0.36	3.6
Hexachlorocyclohexane, Beta-	c	1.3	13
Hexachlorocyclohexane, Gamma- (Lindane)	c	2.5	25
Methoxychlor	nc	410	4100
Oxamyl	nc	2100	21000
Simazine	c	19	190
Toxaphene	c	2.1	21
Trichlorophenoxypropionic acid, -2,4,5(2,4,5-TP)(Silvex)	nc	660	6600

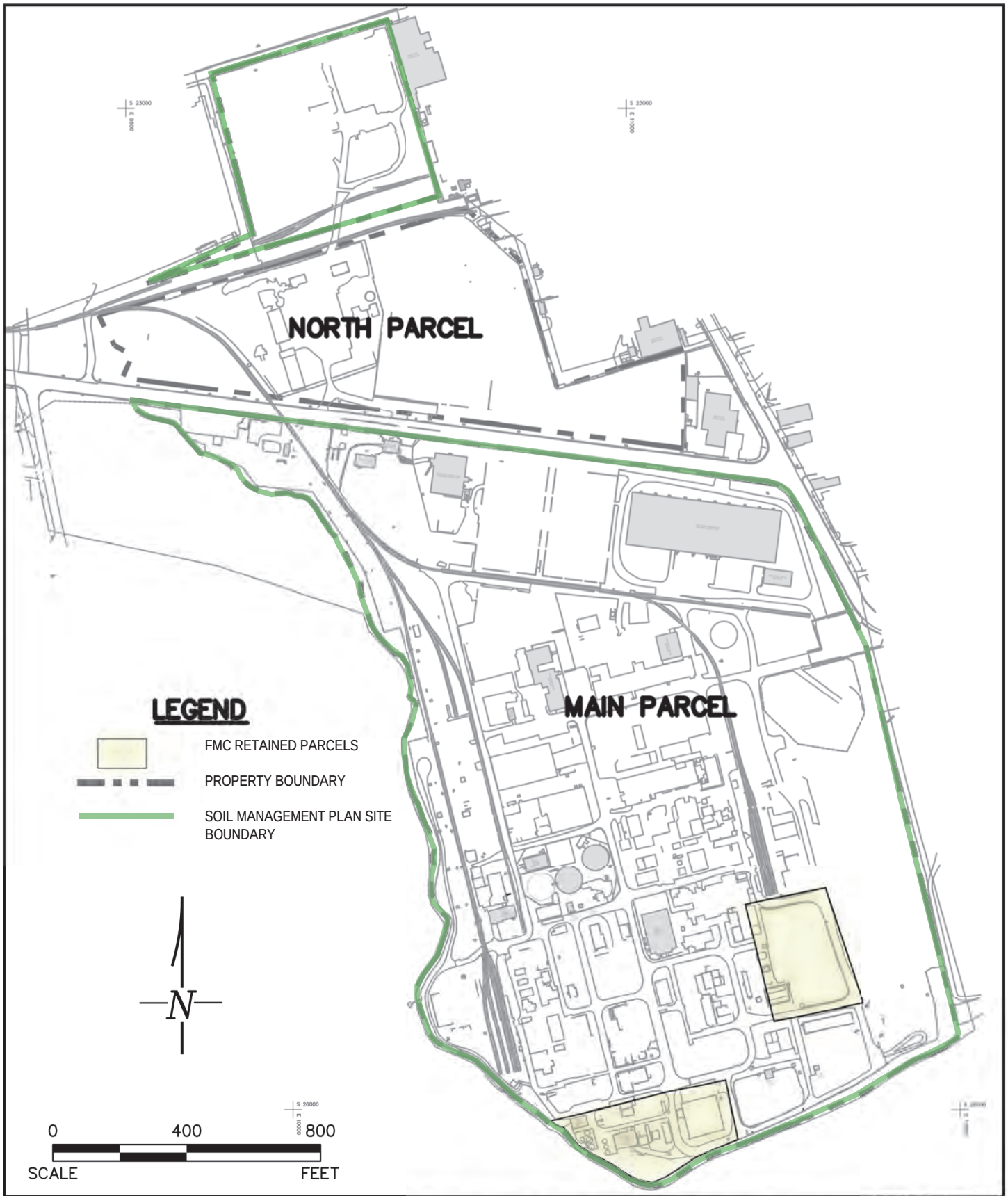
Notes:

NV - No Value Available; c = carcinogenic effects; nc = non-carcinogenic effects; s = saturation exceeded;
* = nc standard <100x c standard; ** = n standard <10 c standard

(a) - Maryland Department of the Environment (MDE) Category 2 Non-Residential Restricted Use Soil and Fill Material means a soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial USEPA soil Regional Screening Levels (RSLs) for non-carcinogens set at a hazard quotient (HQ) of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$ per the MDE Land Management Administration Fill Material and Soil Management Fact Sheet (MDE, 2017). The RSLs are typically updated by the USEPA biannually, and thus the values listed herein need to be checked at the time the SMP is implemented.

(b) - MDE Category 3 Restricted Use Soil and Fill Material, Cap Required means a soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial USEPA soil RSLs for non-carcinogens set at a hazard quotient (HQ) of 1 and carcinogens at a lifetime cancer risk of $1x10^{-5}$ per the MDE Land Management Administration Fill Material and Soil Management Fact Sheet (MDE, 2017). The RSLs are typically updated by the USEPA biannually, and thus the values listed herein need to be checked at the time the SMP is implemented.

FIGURES



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FMC BALTIMORE SITE

FORMER AGRICULTURAL PRODUCTS GROUP
BALTIMORE, MARYLAND

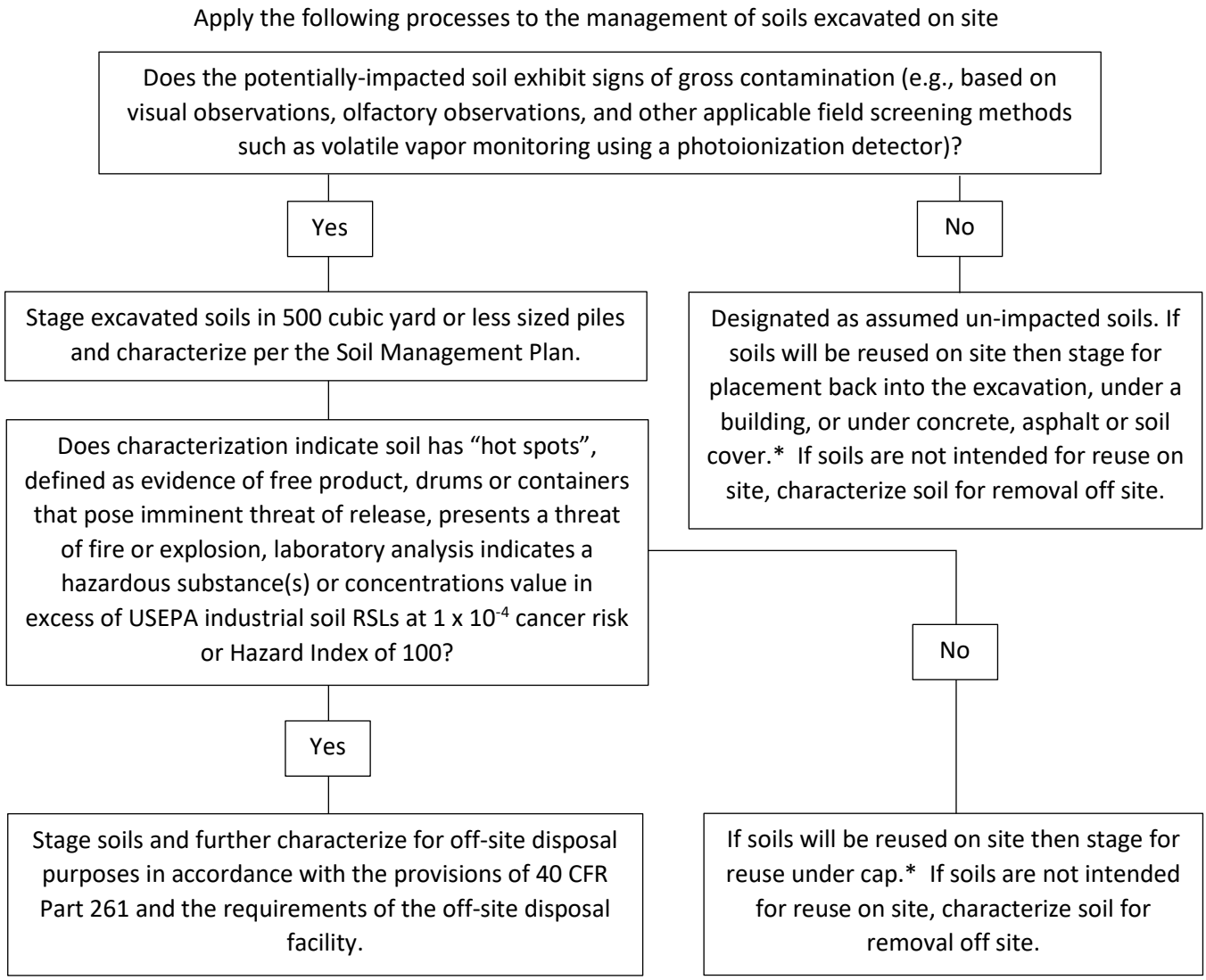
Environmental Resources Management

CADD Review

CHK'D

FIGURE 1

FIGURE 2
SOIL MANAGEMENT DECISION TREE – PRE-DEVELOPMENT
FORMER FMC AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

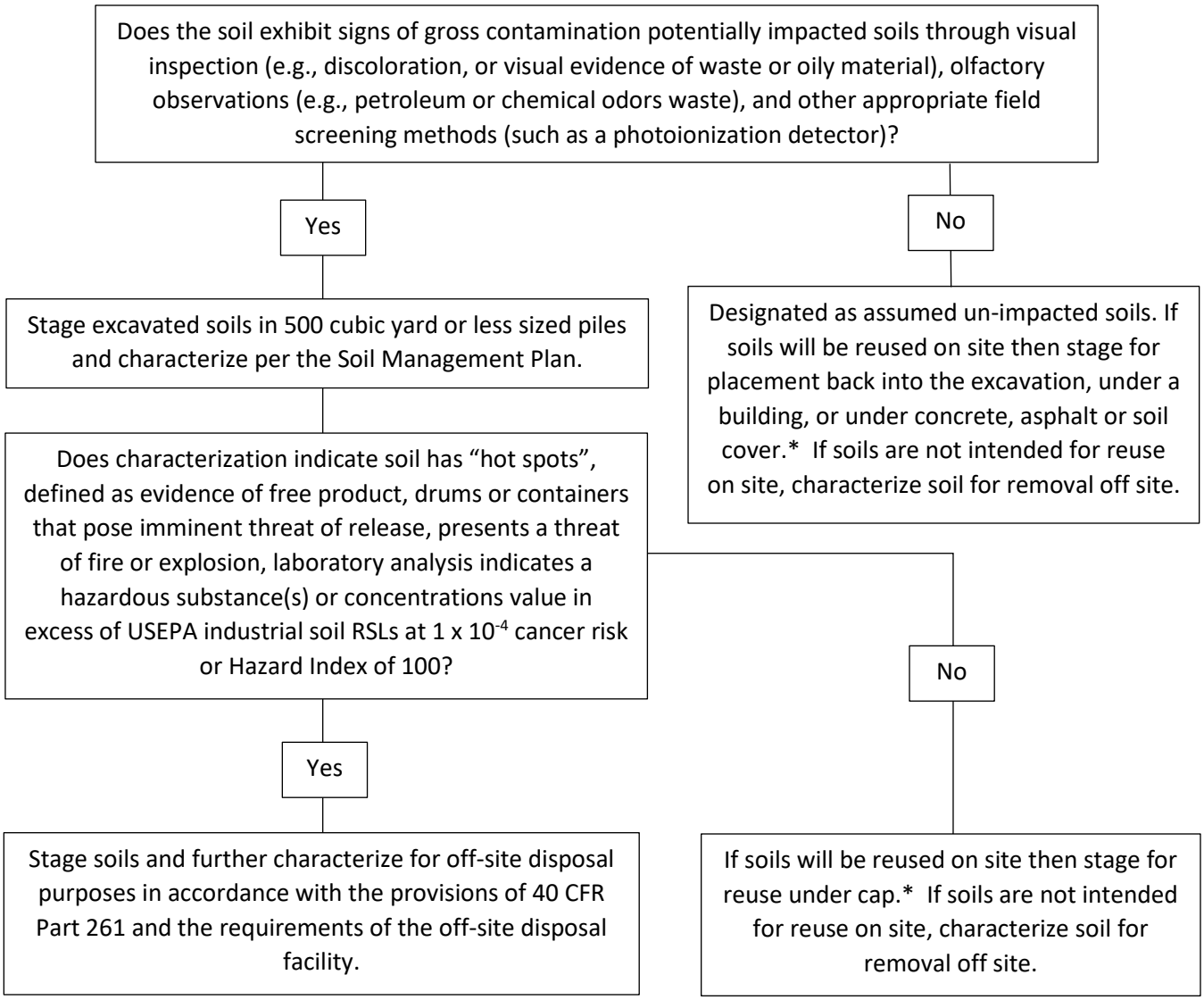


* Soils may be further characterized by laboratory analysis for comparison to USEPA Risk Screening Levels, and evaluated for a less restricted use as landscape cover on site as described in the Soil Management Plan.

FIGURE 3
SOIL MANAGEMENT DECISION TREE – POST-DEVELOPMENT
FORMER FMC AGRICULTURAL PRODUCTS GROUP FACILITY
BALTIMORE, MARYLAND

Soil that is excavated from a location and depth that is above the "marker fabric" of the existing cap may be re-used on site in accordance with existing land-use controls.

Apply the following processes to the management of soils excavated on site from a location and depth that is below the "marker fabric" of the existing cap or outside the lateral limits of the existing cap.



* Soils may be further characterized by laboratory analysis for comparison to USEPA Risk Screening Levels, and evaluated for a less restricted use as landscape cover on site as described in the Soil Management Plan.

APPENDIX A MDE FILL MATERIAL AND SOIL MANAGEMENT FACT SHEET

Maryland
Department of
the Environment

Fill Material and Soil Management

What You Need to Know

The purpose of this fact sheet is to describe how fill material and excess soil can be reused properly during the cleanup and redevelopment of properties throughout Maryland. In many cases, excess soil is generated and fill material is necessary during the cleanup and development phases of a project. To assure that all projects are addressed consistently, the Land and Materials Administration (LMA) has prepared this guidance document for assisting parties that generate or need soil or fill material at sites under the purview of LMA's regulatory programs. This document does not, however, substitute for Maryland Department of the Environment (MDE) regulations, nor is it a regulation itself and does not impose legally binding requirements, and may not apply to a particular situation based upon the circumstances. MDE retains the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular site will be made based on the applicable statutes and regulations.

Introduction

The LMA has created this fact sheet to assist property owners with the management and reuse of fill material and excess soils generated or used at properties under LMA oversight. This fact sheet is to be used in conjunction with the Voluntary Cleanup Program's (VCP) Clean Imported Fill fact sheet and the Innovative Reuse and Beneficial Use of Dredged Material Guidance Document.

What Soils and Fill Material are Subject to this Fact Sheet?

This document lays out guidelines for persons that generate or import soil or fill material for reuse at LMA regulated sites. The fact sheet applies to soil and fill material that is impacted or potentially impacted by polluting substances. These pollutants may include petroleum or hazardous substances listed in the current MDE Soil and Groundwater Cleanup Standards (Cleanup Standards) document or the current U.S. Environmental Protection Agency's (EPA) Regional Screening Levels (RSLs) table. The guidance does not apply to soils or fill material that are subject to federal and state hazardous waste regulations (see 40 Code of Federal Regulations [CFR] Part 260 and the Code of Maryland Regulations [COMAR] 26.13 for requirements and applicability). Soils subject to hazardous waste regulations are any soils contaminated by a listed hazardous waste, or that display a characteristic of a hazardous waste. LMA maintains enforcement authority over soils or fill material when it is used in a manner that creates a threat to human health or the environment, in accordance with Environment Article, § 7-201 *et seq*.

Definitions

The following terms are defined for the purpose of this fact sheet.

Background Level means the level of a substance occurring naturally at the site prior to any manmade spill or release, as defined by § 7-501 of the Environment Article, Annotated Code of Maryland.

Category 1 - Residential Unrestricted Use Soil and Fill Material means a soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current residential EPA soil

RSLs (residential soil, https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide-june-2017) for non-carcinogens set at a HQ of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$. The Category 1 screening levels incorporate the most common human exposure pathways (ingestion, dermal contact, and inhalation of contaminants from soil in outdoor air) using generic exposure assumptions and are protective of acute and chronic health effects for residential populations, including young children. If the soil or fill material background level contains naturally occurring substances at concentrations not exceeding the concentrations of such substances occurring naturally in the environment and in which all other substances are less than or equal to the residential standards, such soils and fill material are considered "Residential Unrestricted Use Soil and Fill Material."

Category 2 - Non-Residential Restricted Use Soil and Fill Material means a soil or fill material that is impacted by a hazardous substance or oil at concentrations less than or equal to the current industrial EPA soil RSLs for non-carcinogens set at a hazard quotient (HQ) of 0.1 and carcinogens at a lifetime cancer risk of $1x10^{-6}$. The Category 2 screening levels incorporate the most common human exposure pathways (ingestion, dermal contact, and inhalation of contaminants from soil in outdoor air) using generic exposure assumptions and are protective of acute and chronic health effects for commercial and industrial populations. If the soil or fill material background level contains naturally occurring substances at concentrations not exceeding the concentrations of such substances occurring naturally in the environment and in which all other substances are less than or equal to the non-residential standards (industrial soil, https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide-june-2017), such soils and fill material are considered "Non-Residential Restricted Use Soil and Fill Material."

Category 3 - Restricted Use Soil and Fill Material, Cap Required means any soil or fill material that is impacted by a hazardous substance or oil at concentrations meeting the restricted use screening criteria for soil and fill material in the Innovative and Beneficial Use of Dredged Material Guidance Document (http://mde.maryland.gov/programs/Marylander/Pages/dredging.aspx). Category 3 means soil or fill material that is impacted by any hazardous substance or oil at concentrations less than or equal to the current industrial EPA soil RSLs for non-carcinogens set at a HQ of 1 and carcinogens at a lifetime cancer risk of $1x10^{-5}$.

Category 4 - Ineligible Soil and Fill Material means a soil or fill material that is impacted by any hazardous substance or oil at concentrations exceeding the restricted use screening criteria for soil and fill material in the Innovative and Beneficial Use of Dredged Material Guidance Document (http://mde.maryland.gov/programs/Marylander/Pages/dredging.aspx) but does not display a characteristic of a hazardous waste; has not been contaminated by a listed hazardous waste; and does not exceed the regional emergency removal management levels used by the EPA (https://www.epa.gov/risk/regional-removal-management-levels-chemicals-rmls).

Disposal Facility means a facility permitted to accept solid wastes by the State of Maryland or other State. In Maryland, such facilities must be permitted in accordance with Title 9 of the Environment Article and the regulations promulgated in COMAR 26.04 or COMAR 26.10.13.

Dredged Material means material excavated or dredged from the waters of State.

Dredged Material Containment Facility means an artificial confinement structure, site or area used for the dewatering of dredged material from the interstitial or carriage water.

Earthen Materials means any mixture of soil, stones or rocks that have been excavated or extracted from a quarry, borrow pit, earthen bank, gravel pit, or mine and have not been affected by a release of oil products, oils, chemicals or by any other polluting substance.

Eligible Property means property that is contaminated or perceived to be contaminated but does not include a site on the National Priority List, a site that is subject to a controlled hazardous substance permit, or a site that is subject to an enforcement action.

Engineered Cap means a system composed of a layer or several layers of natural and synthetic materials used to reduce the infiltration of water into the subsurface and/or to limit the possibility of human exposure to buried materials. A typical cap may consist of a vegetated or otherwise stabilized protective layer of clean soil on the surface, which overlies one or more additional layers that are intended to act as a barrier to infiltration of water; a drainage layer; a capillary break; a gas collection layer; a load dispersion layer; or other purpose depending on the design and intended purpose for the cap. Maryland and federal regulations include specific design requirements for caps depending on the purpose (e.g., solid waste or hazardous waste landfills, etc.).

Engineering Controls means remedial actions directed toward containing or controlling the migration of contaminants through the environment. These include, but are not limited to, storm water conveyance systems, slurry walls, liner systems, caps, leachate collection systems, pump and treat systems, and groundwater recovery systems.

Excess Soil means any soil or earthen material generated as a result of excavation, grading, or other activity that results in soil or earthen material that cannot be reused beneficially onsite.

Fill Material (construction) means soil or dewatered dredged material used to create a foundation for the construction of a structure, such as a road or building, to reclaim lost land such as gullies or mines, to raise the grade on a property, or to provide final cover material for a property.

Hazard Quotient means the ratio of a single substance exposure level over a specified time period to a reference dose for that substance derived from a similar exposure period.

Hazardous Substance means any substance that is defined as a hazardous substance under § 101(14) of the federal act (the Comprehensive Environmental Response, Compensation and Liability Act or CERCLA); or is identified as a controlled hazardous substance by the Department under COMAR 26.14.01.02.

Impervious Surface means a synthetic material with a minimum thickness of 20 mil and a maximum permeability of 1×10^{-10} centimeters/second, or a minimum of 1 foot of clay or other natural fine-grained material having an in-place permeability less than or equal to 1×10^{-5} centimeters/second.*Innovative Reuse* means utilizing excess soil and fill material as resource materials in productive ways as a substitute for other materials subject to certain land use controls. For dredged material, innovative reuse includes use of dredge material in the development or manufacturing of commercial, industrial, horticultural, agricultural, or other products.

Institutional Controls means legal or administrative tools designed to prevent or reduce human exposure to remaining contamination and to prevent activities that may result in increased exposure to or spread of such contamination, including the use of an environmental covenant in accordance with Maryland's Uniform Environmental Covenant Act, Environment Article, § 1-801 *et seq.*

Land Use Controls means any restriction or control that serves to protect human health and the environment by limiting use of or exposure to any portion of the property, including water resources.

Natural Soil means a soil in which all substances naturally occurring therein are present in concentrations not exceeding the concentrations of such substances occurring naturally in the environment and in which no other polluting substance is analytically detectable.*Oil* has the same meaning stated in § 4-401(h) of the Environment Article, Annotated Code of Maryland and COMAR 26.10.01.01 and includes petroleum, petroleum by-products, kerosene, and other compounds.*Risk Assessment* means the process to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media, now or in the future. Human health risk assessments are based on the populations and land uses of the property in question and may include residential and non-residential scenarios.

Soil means unconsolidated geologic and organic materials overlying bedrock, if present.

Soil and Fill Material Management Guidelines

The following guidelines apply to management of soil and fill material received at eligible properties. These guidelines are also illustrated in Figure 1.

- Soil or fill material may not be placed where it is subject to intrusion by groundwater or surface water. It must be placed at least three (3) feet above the maximum expected groundwater elevations at all locations of placement or other sufficient protective measures must be implemented to ensure soil and fill material do not adversely impact groundwater or surface water resources;
- Soil and fill material placed in groundwater use areas may be subject to additional environmental measures and evaluations to ensure placement of soil or fill material will not adversely impact groundwater or surface water resources.
- Soil or fill material shall conform with all appropriate sediment and erosion control regulations during placement and construction.
- Impervious surfaces placed over soil or fill material shall be continuous in all areas that overlie the soil or fill material.

Land use controls may include, but are not limited to, engineering controls and institutional controls.

Residential Unrestricted Use Soil and Fill Material (Category 1)

Soil or fill material with concentrations of hazardous substances or oil less than or equal to the residential unrestricted use screening criteria may be innovatively reused at all sites without restriction. If potential contaminant concentrations in soil or fill material exceed the Category 1 screening criteria, then a more detailed soil or fill material residential risk assessment (considering factors such as magnitude and frequency of detections, land use, exposure parameters and factors, and toxicity values) may be performed that meets a HQ of 1 for non-carcinogens and a lifetime cancer risk of $1x10^{-5}$ for carcinogens. When the residential risk assessment is performed and meets a HQ of 1 for non-carcinogens and a lifetime cancer risk of $1x10^{-5}$ for carcinogens the soil or fill material may be innovatively reused at all sites without soil exposure restrictions and will be considered Category 1 soil and fill material. For soil or fill material that meets the Residential Unrestricted Use Soil and Fill Material definition, a person may send such soil or fill material to any offsite location. The owner or operator of the receiving site may be required to submit written acknowledgement regarding the volume and nature of such soil or fill material to LMA prior to transporting and accepting the materials at the receiving location. Additional documentation from a person placing or transporting the soil or fill material may be required by the LMA program regulating the receiving site, if applicable. Please contact the appropriate regulatory program for additional details.

Non-Residential Restricted Use Soil and Fill Material (Category 2)

Soil or fill material with concentrations of hazardous substances or oil less than or equal to the non-residential restricted use screening criteria may be innovatively reused at all non-residential and non-recreational sites without restriction. If potential contaminant concentrations in the soil or fill material exceed the Category 2 screening criteria, then a more detailed soil or fill material non-residential risk assessment may be performed that meets a HQ of 1 for non-carcinogens and a lifetime cancer risk of $1x10^{-5}$ for carcinogens. When a non-residential risk assessment on soil or fill material is performed and meets a HQ of 1 for non-carcinogens and a lifetime cancer risk of $1x10^{-5}$ for carcinogens, the soil or fill material may be innovatively reused at non-residential and non-recreational sites. The owner or operator of the receiving site may be required to submit written acknowledgement regarding the volume and nature of such soil or fill material to the LMA prior to the transport and acceptance of the material. Additional documentation from a person who places or transports the soil and fill material may be required by the LMA program regulating the receiving site, if applicable. Please contact the appropriate regulatory

program for additional details. The receiving site may also be required to encumber the property with land use controls to ensure that exposure to the soil or fill material meeting the Non-Residential Restricted Use Soil and Fill Material definition is appropriately managed. The land use controls may include a recorded environmental covenant that complies with the Maryland Uniform Environmental Covenants Act (UECA). The environmental covenant shall include a map drawn to scale identifying where the soil or fill material has been placed and copies of the manifests, bill of lading, or other documentation demonstrating the transport and acceptance of soil or fill material. The Department may sign on to the environmental covenant as agency and holder of the environmental covenant.

Restricted Use Soil and Fill Material, Cap Required (Category 3)

If the soil or fill material concentrations of hazardous substances or oil are less than or equal to the Category 3 -- Restricted Use Soil and Fill Material, Cap Required screening criteria (http://mde.maryland.gov/programs/Marylander/Pages/dredging.aspx), an a person may transport such soil or fill material for innovative reuse to a commercial or industrial property with existing soil and fill material containing hazardous substances or oil at concentrations within or less than the same Category 3 parameters for placement beneath an environmental cap. The receiving site may be required to submit a written acknowledgement regarding the volume and nature of the soil or fill material to the LMA prior to transporting the material to the receiving location. The program regulating the receiving site may require additional documentation from a person who places or transports material at Category 3 sites. The receiving site must also agree to encumber the property with land use controls to ensure that exposure to the soil or fill material meeting the Category 3 definition is appropriately managed. The land use controls may include a recorded environmental covenant that complies with the Maryland's UECA. The environmental covenant shall include a map drawn to scale identifying where the soil or fill material has been placed and copies of the manifests, bill of lading, or other documentation demonstrating the transport and acceptance of soil or fill material. The Department may sign on to the environmental covenant as agency and holder of the environmental covenant.

Ineligible Soil and Fill Material (Category 4)

For soil or fill material that exceeds the Category 3 -- Restricted Use Soil and Fill Material, Cap Required screening criteria (http://mde.maryland.gov/programs/Marylander/Pages/dredging.aspx), a person may not use the material for an innovative reuse. Any soil or fill material that exceeds the Category 3 screening levels must be disposed of at either (1) an offsite disposal facility or dredge material containment facility that is permitted by the State of Maryland or another state to accept solid wastes; (2) for dredged material, to a dredged material containment facility; or (3) remain in place with appropriate land use controls. The owner or operator of the receiving site shall provide the Department with appropriate documentation, including but not limited to copies of the manifests, bill of lading, or other documentation demonstrating the transport and acceptance of soil or fill material.

Criteria for Total Petroleum Hydrocarbon

In addition to the criteria described above for each category, the following screening criteria apply for total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO). These criteria are based upon the residential and non-residential soil cleanup standards set at a HQ equal to 0.1 for TPH published in the MDE Cleanup Standards for Soil and Groundwater, June 2008: Interim Final Guidance (Update No. 2.1).

- Category 1 TPH screening criteria: 230 mg/kg for TPH, DRO and 230 mg/kg for TPH, GRO
- Category 2 TPH screening criteria: 620 mg/kg for TPH, DRO and 620 mg/kg for TPH, GRO

- Category 3 TPH screening criteria: 620 mg/kg for TPH, DRO and 620 mg/kg for TPH, GRO
- Category 4 TPH screening criteria: exceeds Category 3 standard

Additional Resources

Cleanup Standards for Soil and Groundwater, June 2008: Interim Final Guidance (Update No. 2.1), Maryland Department of the Environment.

Facts About…VCP Clean Imported Fill Material, Maryland Department of the Environment.

Innovative and Beneficial Use of Dredge Material Guidance Document, August 2017, Maryland Department of the Environment in collaboration with Maryland Department of Transportation's Port Administration.

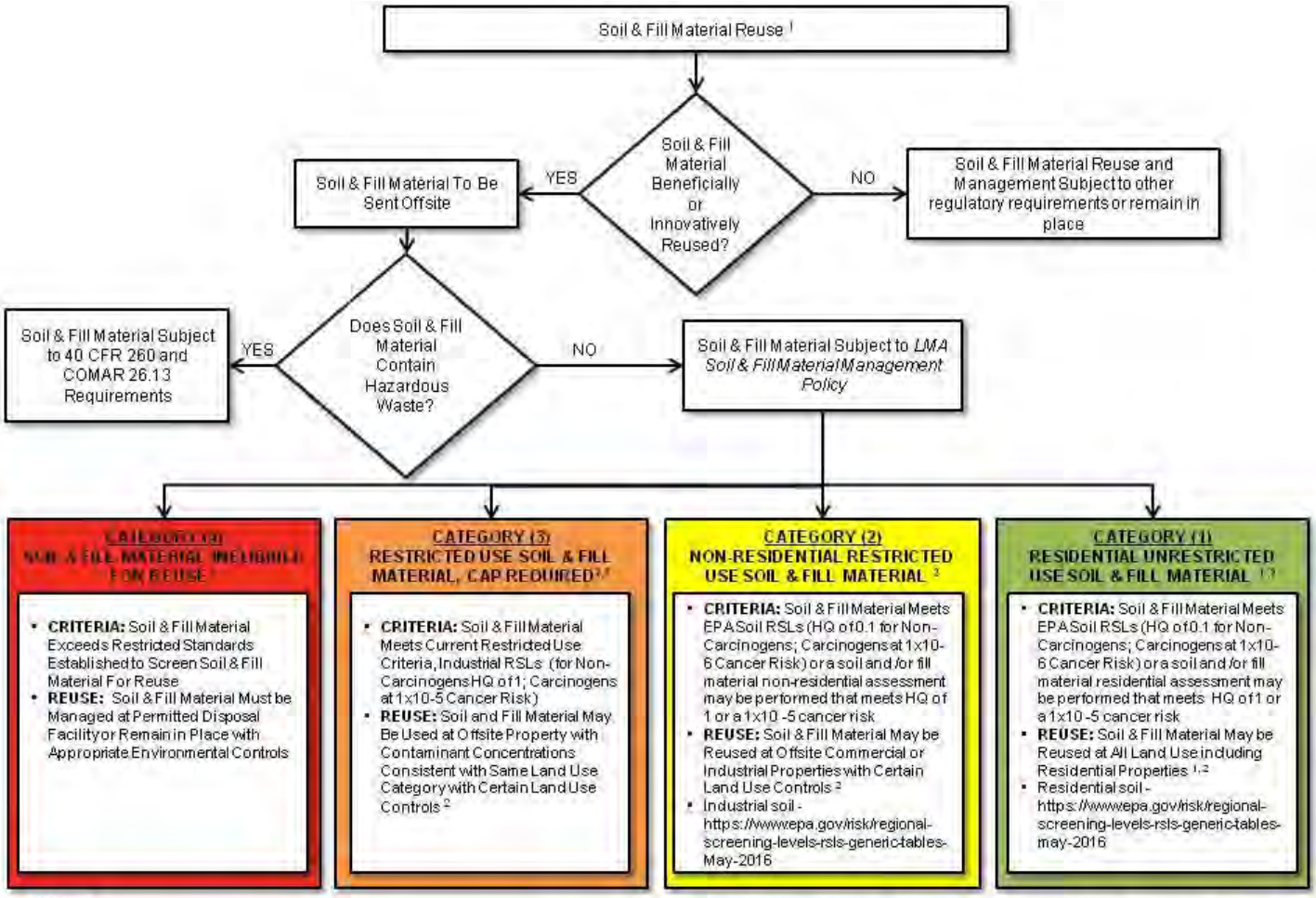
United States Environmental Protection Agency. Regional Screening Levels (RSLs) - Generic Tables (June 2017). https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide-june-2017.

Maryland
Department of
the Environment

Fill Material and Soil Management

What You Need to Know

Figure 1: Soil & Fill Material Management Flow Chart



Footnotes:

(1) Placement of soil or fill material within groundwater use area may be subject to additional environmental measures and evaluations to ensure placement of soil or fill material will not adversely impact groundwater resources.

(2) Soil and fill material transfer is limited to transfers only to a site having existing soils meeting the same or less stringent cleanup standard or within the same land use category as defined in the VCP. The VCP land use categories are: Industrial; Commercial; Recreational; and Residential.

(3) Site-specific factors may be considered for reuse of Category 3: Restricted Use Soil and Fill Material Cap as fill in excess of the Category 3 criteria.

APPENDIX B OUTLINE FOR HEALTH AND SAFETY PLAN

APPENDIX B – OUTLINE FOR HEALTH AND SAFETY PLAN

The purpose of this outline is to identify the minimum content of Health and Safety Plans (HASPs) prepared to comply with the requirements set forth in Section 6.1 of the Soil Management Plan (SMP). A HASP should be developed by each individual contractor conducting intrusive work with input from the site owner and project team, and reviewed with all site personnel, including subcontractors. A HASP should be prepared in accordance with the requirements of the National Institute for Occupational Safety and Health (NIOSH) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, OSHA regulations (particularly 29 CFR 1910 and 1926), state and local regulations, and other USEPA guidance.

Provided herein are the topics that need to be addressed in the HASP.

Administrative Information

This section should include the following information:

- Project Name;
- Site Name and Location;
- Client Contact and Phone;
- Plan Date;
- Project Manager;
- Site Safety Officer;
- Field Work Start Date;
- Anticipated Field Work End Date; and
- Additional Personnel on Site.

Site Description

Include relevant background information regarding the site, such as location, size, type of facility, topography, weather, infrastructure, security, previous site use, etc. Information regarding the Site is available in the SMP and other site documents. Describe nature and extent of any known soil/air/water/groundwater contamination in the area where intrusive work will be conducted. Describe any other aspects of site conditions or operations in the location where intrusive work is being conducted that may potentially affect the health, safety, or security of on-site personnel.

Description of the Field Activities

Include list of tasks to be completed by personnel during the project, and a separate list of tasks to be completed by subcontractors. Site-specific Job Hazard Analysis (JHA) must be completed for each task to be performed. Subcontractors must provide their own HASP and a JHA for each task they will perform for review.

Key Project Personnel and Responsibilities

Include the roles, names, contact information, and responsibilities of personnel, subcontractors, and other individuals associated with health and safety leadership on the project.

Employee Training, Medical Surveillance, and Safety Equipment Requirements

All personnel and contractor personnel working on-site (including their on-site supervisors) who may be exposed to hazardous substances, health hazards, or safety hazards must be trained to a level required by their job function and responsibility, and determined to be fit-for-duty based on medical surveillance and physical work clearance.

Hazard Identification and Control
Physical and chemical hazards and measures to mitigate hazards need to be identified.

Physical Hazards
Identify potential physical and biological hazards and proposed mitigation measures. For example, hazards associated with operating and working near field construction equipment should be included in this section.

Chemical Hazards
Chemicals may be introduced into the body by ingestion, inhalation, or absorption through the skin. Since not all chemicals have the same level of toxicity, the length of time for the exposure and the concentration of the chemical are important in determining the risk. Inhalation and skin contact are the most common routes of entry.

Identify all chemicals known or suspected to be present on the site to which the team may be exposed to determine if they are regulated through any federal or state laws. These regulations may include OSHA-regulated potential carcinogens (29 CFR 1910.1003 through 1016), and those chemicals for which OSHA has established specific respiratory protection requirements (29 CFR 1910.134).

Chemical hazard identification and control, including chemical hazards associated with chemical products used (attach Safety Data Sheet or SDS), and suspected contaminants of concern (COCs) in the work locations and proposed action level(s) for upgrading respiratory protection.

Ambient Air Monitoring
Ambient air monitoring is required to protect workers from exposure to hazardous concentrations of substances. Identify all COCs, their action levels for upgrading repository protection, specific type of direct-read real-time monitoring equipment to be used and the frequency of monitoring. At a minimum, a photoionization detector (PID) shall be used to monitor the presence of volatile organic vapors in the breathing zone. The PID shall utilize a minimum 10.6 eV bulb and be calibrated in the field in accordance with the manufacturer's requirements.

Personal Protective Equipment
In situations where the type of chemical, concentration, and possibilities of contact are not known, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be better identified. Identify the level of PPE selected for each task based on the following:

- Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity;
- Potential for exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done; and
- Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

Minimum PPE requirements (OSHA Level D) include the following:

- High-visibility vest/cloths;
- Safety Glasses;
- Hard hat;
- Hearing protection;
- Safety boots;

- Work gloves; and
- Long Sleeves.

Respiratory protection, if required, is a major component of PPE selection. It must include these three elements: 1) training in respiratory protection techniques, 2) completion of medical surveillance confirming that you are fit to wear a respirator, and 3) fit testing with the make and model of respirator you will be using.

Subsurface Clearance Procedures
Include the standard procedures and tools (e.g., air knife, soft dig, hand clearance) for conducting subsurface clearance, including placing a call to Maryland's one call system, Miss Utility. The one call requirement is to file a ticket at least two full business days prior to the day work will start.

Site Rules, Facilities and Equipment
Identify the designated smoking and eating areas, sanitation and potable water locations, any temporary facilities on site (construction trailers), the location of safety equipment, and specific site communications (radios, cell phones, etc.).

Identify specific site rules including site sign in/out location, training requirements, designated eating and smoking areas and forbidden actions such as bringing weapons onsite and alcohol and drug use. Safety equipment, including a first aid kit(s), eyewash station(s), and fire extinguisher(s) need to be available on-site.

Work Zones
Identify and describe the setup of the exclusion zone(s), contamination reduction zone(s) and support zone(s).

Describe procedures for limiting unauthorized entry to the work zone(s) as well as any security requirements.

Decontamination Procedures
Decontamination involves the orderly controlled removal of contaminants from both personnel and equipment. Describe personnel and equipment decontamination requirements, including information on disposal of used PPE, spent cleaning agents and water.

Spill Prevention and Response
A spill prevention program involves the use of preventative measures in order to reduce the potential for environmental releases. Identify procedures for equipment inspections, staging of equipment on appropriate containment pads, secondary containment, and general housekeeping practices.
If project activities involve the use of drums or other containers, the drums or containers must meet the appropriate DOT regulations, including labeling and secured lids.

Waste Management Plan
A Waste Management Plan must be created to describe the management and disposition of investigation-derived waste or soil or materials determined to be a waste in accordance with the procedures described in the SMP.

Emergency Response and Contacts
The site safety officer has primary responsibility for handling emergency situations. This includes taking appropriate measures to ensure the health and safety of site personnel and the public and accounting for all team members after an emergency and when it is safe to restart work.

Possible actions may involve the evacuation of personnel from the site area and ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. Describe factors affecting emergency response as well as alarms, muster points, methods of evacuation, decontamination, and how to arrange for medical treatment or first aid for any person requiring medical attention.

Identify the nearest emergency contacts (hospital, urgent care center, police and fire stations) as well as names, locations and phones numbers of key team members including the project manager, field manager, field safety officer, Health and Safety Director, subcontractors and client contact. A map and directions to the nearest hospital must be posted on site.

Site Safety Briefings
The main components of this section are:

- Communication and review of the HASP with the field team prior to commencing site activities;
- Daily safety meeting identifying work tasks;
- Changes in site conditions or changes in safety documents;
- Discussions of recent incidents or observations; and
- Periodic audits of the HASP.

Other Relevant Requirements

- *Site Inspections:* The designated Site Safety Officer will perform daily walkthrough inspections of the job site to assess conditions.
- *Stop Work Authority:* All site personnel have the authority, without fear of reprimand or retaliation, to immediately stop any work activity that presents a danger to the site team or the public.
- *Work Permit System:* If the project mandates use of a Work Permit system, describe the system and the checklists or permits that may be required.

Acknowledgment of HASP
Prior to commencing work all site workers, contractors and visitors must sign and date the HASP acknowledging they have read, understood and agree to follow the guidance contained in the HASP.

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted Electronically

August 7, 2020

Mr. John Hopkins
Land and Chemicals Division (3LC20)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Corrective Measures Implementation Work Plan (CMIWP)
Permit for Corrective Action, EPA ID No MDD 0030781875
FMC Corporation, Former Agricultural Products Group Facility
1701 East Patapsco Avenue, Baltimore, Maryland 21226

Dear Mr. Hopkins:

FMC Corporation (FMC) and NorthPoint Development (NorthPoint) are submitting the referenced Corrective Measures Implementation Work Plan (CMIWP) to the United States Department of Environmental Protection (USEPA) for review. This CMIWP is submitted in compliance with Corrective Action Permit No. MDD 0030781875 (Permit). This CMI Work Plan replaces the February 17, 2011 document titled *Revised Version Corrective Measures Implementation Work Plan for the Energy Answers Redevelopment Parcel (50 Percent Design Submittal)*, approved by the USEPA in a letter dated February 28, 2011. This updated CMIWP supports the redevelopment of the approximately 68-acre FMC Main Parcel.

If you have any questions regarding this CMIWP, please do not hesitate to contact me at (215) 299-6358.

Sincerely,

Jonathan Bucca, P.E.
Remediation Project Manager

Enclosure: Corrective Measures Implementation Work Plan, Former Agricultural Products Group Facility Baltimore, Maryland

cc: L. Pizarro, EPA
B. Coblentz, Maryland Department of Environment
A. Mace, NorthPoint
D. Groux, FMC
R. Keating, ERM

Prepared for:

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104

And

NorthPoint Development, LLC
4825 NW 41st St #500
Riverside, MO 64150

Corrective Measures Implementation Work Plan

Former Agricultural Products Group Facility, Baltimore, Maryland

August 7, 2020

Project No.: 0542128

The business of sustainability

ERM

Corrective Measures Implementation Work Plan

Former Agricultural Products Group Facility, Baltimore, Maryland

August 7, 2020

Project No.: 0542128

Environmental Resources Management, Inc.
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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Acronyms and Abbreviations

bgs	below ground surface
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CQA	Construction Quality Assurance
DNAPL	Dense Non-Aqueous Phase Liquid
E&S	Erosion and Sedimentation
ERM	Environmental Resources Management
FDRTC	Final Decision and Response to Comments
FMC	FMC Corporation
GWMP	Groundwater Monitoring Plan
GWTP	Groundwater Treatment Plant
HASP	Health and Safety Plan
HDPE	High-density Polyethylene
MDE	Maryland Department of Environmental
MIP	Membrane Interface Probe
NAPL	Non-Aqueous Phase Liquid
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SIR	Site Investigation Report
SMP	Soil Management Plan
SSDV	Sub-slab Depressurization and Venting
SSV	Sub-slab Venting
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1. INTRODUCTION

On behalf of FMC Corporation (FMC) and NorthPoint Development, LLC (NPD), Environmental Resources Management, Inc. (ERM) has prepared this Corrective Measures Implementation (CMI) Work Plan for the Main Parcel for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC property located at 1701 East Patapsco Avenue in Baltimore, Maryland (Figure 1, Site). The Site is subject to the Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 11984, 42 U.S.C. Sections 6901 et seq.

This CMI Work Plan replaces the February 17, 2011 document titled *Revised Version Corrective Measures Implementation Work Plan for the Energy Answers Redevelopment Parcel (50 Percent Design Submittal)* (ERM, 2011), approved by the USEPA in a letter dated February 28, 2011 (USEPA, 2011). This updated CMI Work Plan supports the redevelopment of the approximately 68-acre FMC Main Parcel (formerly part of FMC's Agricultural Products Group, with active manufacturing operations having ceased in 2008 and equipment and buildings dismantled and removed in 2008-2009).

Two additional CMI Work Plans include the scope of remediation to implement the corrective measures.

1. The CMI Work Plan for the North Parcel (ERM, 2016) describes the proposed corrective measures to be integrated into the redevelopment of the North Parcel, which is located at 1600 East Patapsco Avenue. The North Parcel CMI Work Plan was approved by USEPA (USEPA, 2017a), and partially implemented in the form of a soil hot spot remediation. The North Parcel CMI Work Plan includes the same remedial elements described herein, namely the need for a vapor mitigation system and a cover on a portion of the North Parcel. The vapor mitigation system (as applicable if a building is constructed) and soil cover on the northern six-acre area will be implemented as part of redevelopment. The vapor mitigation approach included herein will replace the vapor mitigation scope contained in the North Parcel CMI Work Plan.
2. The CMI Work Plan for Groundwater Recovery Optimization (ERM, 2017) was approved by USEPA (USEPA, 2017), and fully implemented by FMC. USEPA approval (USEPA, 2019) of the CMI Report (ERM, 2019) in a letter dated November 14, 2019 completed the final step of the corrective action process to convert the groundwater recovery system from an interim remedy to a final remedy.

Changes to the 2011 CMI Work Plan include the following:

- The engineering requirements for Site cover and soil vapor mitigation system in new buildings included in this CMI Work Plan apply to the entire 68-acre Main Parcel versus the 2011 CMI Work Plan that referenced the 34-acre Energy Answers redevelopment project;
- The description of the proposed NPD development plan;
- Updated cap and cover strategy to manage workers' exposure to Site soils;
- Updated references to the Site corrective action requirements included in USEPA decision documents issued since the 2011 USEPA CMI Work Plan was approved by USEPA, and the other CMI Work Plans approved by USEPA for other elements of the remedial strategy;
- Inclusion of the ability to demonstrate to USEPA through field studies that vapor intrusion does not pose a threat to human health and obtain prior written approval from USEPA that a vapor intrusion control system is not needed for new buildings;
- Two options for the proposed design of the sub-slab venting system are presented for use. Both design approaches meet the intent of the design, namely to mitigate the upward movement of volatile organic vapors into a building. This change also applies to a building placed on the North Parcel; and

- The long-term maintenance plan for Site cover, fencing and soil vapor mitigation systems in new buildings is included in Appendix A rather than imbedded in the document.

1.1 Background

As part of the corrective action process, FMC submitted a Corrective Measures Study (CMS) for the Energy Answers Redevelopment (ERM, 2010) to the USEPA on April 27, 2010. Section 1.2 of the CMS identified key elements of FMC's Site-wide remedial strategy designed to accommodate the future use of the Site. USEPA communicated its approval of the draft version of the CMS in a letter dated June 7, 2010 (USEPA, 2010), that included a requirement that "no on-Site activities that involve soil disturbance may take place" before a Soil Management Plan (SMP) is approved by USEPA. An initial SMP was submitted to USEPA on July 21, 2010 (ERM, 2010a) and approved in a letter dated September 27, 2010 (USEPA, 2010a). An updated SMP to support the proposed redevelopment of the entire 90-acre Site by NPD was submitted to USEPA in May 2020 (ERM, 2020).

Empirical soil vapor data and the risk evaluation presented in the CMS Report indicated that vapor intrusion could pose an unacceptable human health risk in certain buildings, and that mitigation measures should be considered to protect worker health and safety. Tables C-3 and C-4 in the CMS Report identified the carcinogenic and non-carcinogenic contaminants of potential concern (COPCs) in soil vapor. The carcinogenic COPCs included the following: benzene, carbon tetrachloride, chloroform, p-dichlorobenzene, ethylbenzene, tetrachloroethylene, and vinyl chloride. The non-carcinogenic COPCs included the following: chlorobenzene, hexane, propylene, 1,2,4-trimethylbenzene, xylenes (total) and m,p-xylene.

The selected remedy for the Site was set forth in the Final Decision and Response to Comments (FDRTC) issued by USEPA Region III on April 14, 2011 (USEPA, 2011a). FMC is required to implement the remedy through the Permit for Corrective Action (Permit) (USEPA ID No. MDD0030781875) issued by USEPA on January 30, 2013 (USEPA, 2013). The USEPA remedy for the Site included in the FDRTC and in Section II.B.3 of the Permit includes the requirement for a developer to install vapor mitigation beneath new buildings for the entire Site. USEPA subsequently approved a provision that would allow the avoidance of a vapor mitigation in the event a field demonstration is performed showing that the potential for vapor intrusion does not exist. Therefore, the corrective measures objective for vapor mitigation is as follows:

- Mitigate the migration of volatile vapors from the soil and groundwater into buildings to protect worker health and safety.

The recommended corrective measures alternative in the CMS Report to mitigate soil vapors is a sub-slab vapor management system. Mitigation of the migration of volatile vapors through the installation of engineering controls will prevent future potential exposure of the Site workers to vapors. Additionally, the USEPA indicated in a November 19, 2019 email (USEPA, 2019a) that the developer can forego vapor mitigation if it can be determined through a field demonstration that the potential for unacceptable risk from vapor intrusion does not exist. In the absence of an exposure, media specific cleanup standards are not needed.

The USEPA soil management strategy for the Site included in the FDRTC includes the requirement to place cover over the Site and manage stormwater to protect future workers from direct contact to potentially impacted soil. This CMI Work Plan addresses this requirement and provides engineering requirements for the placement of concrete, asphalt or landscape soil to meet the USEPA Site cover requirement. The USEPA soil management strategy also includes the implementation of a SMP to protect Site construction workers conducting earth moving activities through the requirement to conduct the work under a health and safety plan.

1.2 Remedial Approach

The remedial approach has been developed to achieve the objectives of the Soil Management Strategy section of the USEPA FDRTC and Section II.B of the Permit. Key elements of the modified USEPA's Site-wide remedial approach include the following:

1. Control potential migration of groundwater into the adjoining surface waters by continued operation of the groundwater recovery system. This part of the remedial strategy was addressed through the implementation of the CMI Work Plan for Groundwater Optimization (ERM, 2018). The groundwater optimization was deemed complete by USEPA in 2019 (USEPA, 2019) through the approval of the report titled *Corrective Measures Implementation Report for Groundwater Recovery Optimization* (CMI Report);
2. Manage exposure of construction workers to subsurface soils by requiring the use of a SMP, a health and safety plan, and Occupational Safety and Health Administration (OSHA)-trained workers. This requirement was initially met through the USEPA approval of the July 2011 SMP. The SMP was updated to reflect the current Site conditions and the NPD proposed redevelopment (ERM, 2020);
3. Manage exposure of future Site workers to subsurface soils through the construction of buildings, concrete and asphalt pavement, or landscaped soil surfaces associated with the redevelopment areas as well as restrict access to any areas of the Site that are not under an existing or proposed cover by installing a fence; and
4. Manage potential exposure to soil vapors by requiring the installation of vapor mitigation for all new buildings, or demonstrate through field investigation that the potential for vapor intrusion does not exist.

In October 2019, FMC entered into an agreement to divest the majority of the Property to NPD. NPD is currently proposing to construct three warehouses on the Main Parcel (Figure 2), and to pave the majority of the North Parcel. The Property to be redeveloped by NPD includes a substantial portion of the Main Parcel located at 1701 East Patapsco Avenue, and the majority of the North Parcel located at 1600 East Patapsco Avenue. NPD anticipates conducting the design and procurement phase in 2020, and starting construction in 2021. NPD will demolish the existing buildings on the Main Parcel, with the exception of two small control buildings that support the groundwater recovery system. Additionally, FMC will retain the Groundwater Treatment Building and adjacent garage. Under the terms of the agreement, FMC will retain ownership of the Inactive Disposal Area, Stormwater Retention Basin, and the Groundwater Treatment Plant (comprising approximately 4.36 acres of discontinuous land on the Main Parcel) (Figure 1). Specifically, NPD has confirmed the following redevelopment plans:

- The majority of construction will be above grade, and supported by the importation of soil or other like materials to achieve the required final grade;
- Disturbed areas within the entire 64-acre redevelopment footprint on the Main Parcel will be covered with buildings, concrete, asphalt or landscaping soil;
- All uncapped areas will be fenced off to limit workers' exposure to Site soils by restricting access;
- Constructed buildings will include vapor intrusion mitigation, unless otherwise demonstrated that no potential for vapor intrusion exists;
- Existing underground utilities will not be used for the proposed development, and new utilities will be placed below grade; and
- Excavations will be limited in their extent, and subsurface materials generated from excavations will be managed in accordance with the updated SMP.

1.3 Work Plan Purpose

This CMI Work Plan provides the 50 percent design to address the requirement for: 1) Protecting site workers from impacted soil through the use of cover (i.e.: concrete, landscaping, or asphalt) in combination with the use of a chain link fence to restrict access 2) the requirement for a vapor intrusion mitigation system for new buildings, unless it can be demonstrated through a field investigation that the potential for vapor intrusion does not exist.

The CMI design can consist of a conceptual design phase (30%), an intermediate design with plans and specifications (50%), and the development of final plans and specifications (100%). However, the components of the CMI design can be consolidated to streamline the review and approval process in accordance with USEPA's May 1994 RCRA Corrective Action Plan guidance document (USEPA, 1994). This CMI Work Plan is the 50% design and is the sole design submittal rather than iterative design submittals because the majority of the design is related to three primary remedial actions that are straightforward: Site cover, fencing, and vapor mitigation systems for new buildings. NPD will prepare the final design for the remedial elements. Note that the final system design could vary from the typical design elements shown herein, but will adhere to the design basis described herein.

The purpose of the CMI Work Plan is three-fold:

1. Present the 50% design for the cover system and fencing that limit exposure of future Site workers to Site soils. The proposed Site cover consists of the construction of buildings, concrete or asphalt pavement, or landscaped soil surfaces associated with the construction of the redevelopment. A fence, installed 5 feet inside of the proposed limits of cover, will restrict access to portions of the Site that may not contain a suitable cover;
2. Present the 50% design for the sub-slab vapor mitigation system for new occupied structures; and
3. Present the long-term maintenance requirements for the integrity and protectiveness of the Site covers, fence and vapor mitigation systems.

1.4 Work Plan Organization

The remainder of this plan is organized as follows:

- Section 2 – Remedial Design. This section describes the proposed design for the covers and sub-slab vapor mitigation systems.
- Section 3 – Maintenance Plan. This section describes the periodic inspection and documentation process to maintain the long-term protectiveness of the covers, fence and vapor mitigation systems.

2. REMEDIAL DESIGN

2.1 Site Cover

A cover will be installed in the areas shown in Figure 3 as required by the USEPA FDRTC. These are the areas of the Site that are intended for future development and reuse. The cover will comprise a combination of paved surfaces (concrete or asphalt), buildings, and landscaped areas. The cover will be installed to mitigate potential direct contact to underlying soils by future Site workers and visitors.

Prior to installation of the Site cover system, existing buildings on the Property other than those that are associated with ongoing operation of the groundwater recovery and treatment system will be demolished during Site development. Existing concrete and asphalt pavement will also be demolished where necessary based on the final Site grading plan. The Site will then be graded in accordance with the final grading design. All demolition and grading activities will be performed in accordance with the Revised Soil

Management Plan (ERM, 2020). The demolition, grading, and cover system installation process may occur in phases based on the redevelopment plans.

2.2 Fencing

To protect existing site features and minimize the disturbance of both shoreline and critical habitat areas (i.e., Curtis Bay and Stonehouse Cove habitat areas), and as discussed with EPA on April 28, 2020, Site areas that are not proposed to have a full cover installed will be restricted by a fence, located 5 feet within the limits of proposed cover (Figure 3).

2.3 Vapor Mitigation System for New Buildings

A vapor mitigation system will be used to mitigate Site workers' potential indoor exposure to soil vapors by requiring the installation of vapor mitigation for new buildings. Alternatively, a field investigation will be conducted to demonstrate that the potential for vapor intrusion is negligible, and the need for the vapor mitigation system can be eliminated. This section describes the engineering requirements for the vapor mitigation system.

Field demonstrations to determine the need for vapor mitigation will need to be conducted and the results submitted to USEPA for approval to eliminate the need for a vapor mitigation system in all or part of the proposed buildings. The scope of the demonstration will be determined at the time the field investigation is conducted.

Two different vapor mitigation systems are included herein for ultimate selection during detailed design by NPD. The first approach was presented in the 2011 version of the CMI Work Plan, and is referred to as sub-slab venting or SSV. The second approach is referred to as sub-slab depressurization (SSD). Both approaches have been determined to be effective to mitigate the upward flow of vapors into a building, and can be constructed with either passive or active flow systems. A passive flow system does not require power, relying on ambient air temperatures and wind to remove air and any volatile constituents from beneath the floor slab. Alternatively, an active flow system utilizes an electrical blower to evacuate air to create the depressurization beneath the floor slab to mitigate vapor intrusion into the overlying building. NPD can select the system based on evaluation of compatibility with the building design, as well as constructability and cost factors.

The SSV or SSD system will be installed as part of the construction of the new buildings' foundations. Each vapor mitigation system installed as a passive system will be designed in such a way that it could later be converted to an active system if warranted in the future. Any vapor mitigations systems that are designed and installed as active systems will remain as active systems unless the system design also accommodates use as a passive system.

In addition to the sub-slab vapor mitigation systems, geomembrane boots will be used to seal the openings around utilities entering buildings (see Detail E on Figure 4 for a typical utility).

2.4 Design Basis

2.4.1 *Site Cover*

The mitigation of exposure of future Site workers to subsurface Site soils will be accomplished through the construction of buildings and concrete, asphalt or landscaped surfaces associated with the redevelopment of the Site. Design specifications for the Site cover are as follows:

- In concrete or asphalt pavement areas, the final combined thicknesses of concrete or asphalt, stone and subbase will be determined during the final design, with a minimum thickness of one foot and will be based on an evaluation of geotechnical data and traffic flow (Detail A on Figure 4).

- Landscaped areas or other areas where no buildings are present will have a minimum of two feet of clean fill material overlaying a marker fabric (Detail B on Figure 4). The specifications for the quality of imported clean fill are included in the Revised SMP.
- Two feet of clean fill overlying marker fabric will be placed around the root balls of any planted trees and one foot of clean fill will be placed above and below utility lines with the all trenches lined with marker fabric (Details C and D on Figure 4).

2.4.2 *Fencing*

The mitigation of exposure of future Site workers to subsurface Site soils between the limit of the cap and the shorelines along Curtis Bay and Stonehouse Cove will be accomplished by restricting access with a fence (Figure 3). The fence will be constructed with chain link and will be eight feet high. Gates will be installed at selected locations to provide vehicle access to the groundwater conveyance system.

Additionally, the existing eight foot high chain link fence along Stonehouse Cove and Curtis Bay will restrict access to the Site from the water.

Signs will be attached to the fence located adjacent to the development area. The signs will conform to OSHA 1910.145 (specifications for accident prevention signs and tags), and ANSI Z535 Safety Alerting Standards, and include the following wording: “Warning, No Unauthorized Entry, Hazardous Materials Present.”

2.4.3 *Vapor Mitigation System for New Buildings*

2.4.3.1 Sub-slab Venting

The SSV system is a one-layer barrier system constructed beneath the building floor, and will include a synthetic membrane, permeable gravel layer, horizontal piping, and vents. Proposed design elements for the SSV system are provide below. The final vapor mitigation system design could vary from the design elements presented herein, but will adhere to the design basis and provide adequate protection to future Site workers. The passive SSV system, if selected, will be designed and installed in such a way that it could later be converted to an active system, if warranted.

- **Vapor Barrier**. A vapor barrier, 50-mil High Density Polyethylene (HDPE) smooth geomembrane, will be placed below the slab. Additionally, the geomembrane will be properly seamed to achieve a contiguous barrier. Chemical compatibility with the HDPE was established by reviewing industry standard manufacturer technical specifications. HDPE is the preferred material for the vapor barriers due to durability and cost. The technical specifications for an industry standard manufacturer were cross-referenced with the volatile organic compounds detected in the soil vapor samples. This review determined that 50-mil HDPE is compatible with the specific compounds in the soil vapor.
- **Gravel**. A permeable gravel layer of No. 57 stone or like material will be placed below the geomembrane to enable lateral conveyance of the soil gas. The gravel layer will be composed of mid-sized gravel with no fines, which will enable significant voids to form in the layer and trap rising soil gas. The gravel layer should be a minimum of 8 inches thick. The horizontal collection pipes will be located within the gravel layer.
- **Piping**. Horizontal pipes will be manifolded within the permeable gravel layer to facilitate conveyance of vapor to exhaust vents. The horizontal pipes should be 4-inch diameter Schedule 40 HDPE or polyvinyl chloride (PVC) material, spaced a maximum of 40 feet apart. NPD can select the material for the pipe based on evaluation of compatibility with the building design, as well as constructability

and cost factors. The bottom half of each pipe will have four rows of perforations to facilitate vapor collection.

- **Geotextile**. An 8-ounce non-woven geotextile will be placed below the permeable gravel layer to prevent the introduction of fines, while still allowing soil gas to rise into the layer. Also, geotextile will be placed below and above the geomembrane in order to protect it from the concrete foundation slab and permeable gravel layer, both of which are puncture hazards.
- **Ventilators**. Vertical risers connected to the horizontal pipes will be installed with ventilators to exhaust the gases above the roof and outside of the breathing zone for ground level employees. The vent(s) should be a minimum of 3 feet above the roof and 10 feet from any door, window, or air intake.

A typical plan view of the vapor management system with exhaust vent locations is shown in Figure 5. Figures 6 through 8 present the design elements for the SSV system for new buildings.

2.4.3.2 Sub-slab Depressurization

SSD is a depressurization technology designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a fan-powered vent drawing air from beneath the slab; thus, even if there are holes, cracks, or other pathways between the building and the subsurface, the vapors will flow downward, not upward. For the proposed buildings, the SSD system will be constructed beneath the floor slabs, and include a two-layer synthetic membrane system filled in between the geotextile layers with permeable gravel, vertical piping, and vents to the roof. The proposed design presented below and in the attached figures is consistent with the design included in the 2018 AARST design document. The final vapor mitigation system design could vary from the design elements presented herein, but will adhere to the design basis and provide adequate protection to future Site workers.

The various components of the SSD system are summarized below:

- **Vapor Barrier**. A vapor barrier, consisting of two HDPE smooth geomembrane layers, will be placed below the slab. A 15-mil HDPE geomembrane is sufficient when using an active blower system for vapor recovery; a thicker geomembrane may be required when installed as part of a passive SSD system. If a passive SSD system is selected, it will be designed and installed in such a way that it could later be converted to an active system by addition of a blower(s), if warranted. The interstitial space between the geomembrane layers will be filled with gravel. The upper geomembrane layers will be properly seamed to achieve a contiguous barrier. The lower geomembrane layer will line the suction pit, extending a minimum of 12 feet beyond the suction pit, and transition to a nonwoven geotextile fabric to provide separation of the gravel from underlying soils. Chemical compatibility with the HDPE was established by reviewing industry standard manufacturer technical specifications. HDPE is the preferred material for the vapor barriers due to durability and cost. The technical specifications for an industry standard manufacturer were cross-referenced with the volatile organic compounds detected in the Site soil vapor samples. This review determined that 15-mil HDPE is compatible with the specific compounds in the soil vapor.
- **Gravel**. A permeable gravel layer of ASTM No. 5 stone or like material will be placed between the two geotextiles to enable lateral conveyance of any soil gas that enters the depressurization layer. The interstitial stone layer is composed of mid-sized gravel with no fines, which will enable significant voids to form in the layer and trap rising soil gas. The gravel layer will be a minimum of 4 inches thick. The horizontal collection pipes will be located within the gravel layer.
- **Piping**. Horizontal collection pipes may be placed within the permeable gravel layer to facilitate conveyance of vapor from the collection sumps to exhaust vents. The horizontal pipes will be constructed using a minimum 6-inch diameter Schedule 40 PVC or HDPE. NPD can select the

material for the pipe based on evaluation of compatibility with the building design, as well as constructability and cost factors.

- **Ventilators**. Vertical risers will be installed with ventilators to exhaust the gases above the roof and well above the breathing zone for ground level employees. The vent(s) should be a minimum of 3 feet above the roof and 10 feet from any door, window, or air intake.

A schematic plan view of the SSD system with typical exhaust vent locations is shown in Figure 9. Figure 10 presents the design elements for the SSD system for new buildings.

3. MAINTENANCE PLAN

Routine maintenance activities will be performed to safeguard the long-term effectiveness and integrity of the corrective measures in accordance with the enclosed Maintenance Plan (Appendix A). The Site inspections described in the Maintenance Plan will be performed on an annual basis by a qualified inspector (e.g., licensed Professional Engineer or someone under the direct supervision of a licensed Professional Engineer), who is retained by the Property owner.

The inspection will note any areas where repairs are necessary, and provide a written description, including photo documentation, of any locations requiring repair. Ongoing inspections should confirm that the system is still operational and that system components have not failed due to age, incidental damage, vandalism, or fouling. Inspection observations will be recorded on the inspection report form (Appendix A), copies of which will be kept on file. Records will be maintained in a designated area at the Site for review by USEPA. A summary and schedule for any activities necessary to maintain corrective action components will be included with the inspection reports.

3.1 Site Cover

Physical maintenance requirements for the Site will include maintenance of the cover, including floor slabs and paved and landscaped areas, to prevent exposure of underlying impacted soil and limited infiltration into groundwater. The Property owner will be responsible for maintenance inspections, performing maintenance, and for maintaining all inspection records. Site inspections for the engineered cover and landscaped areas will be performed annually, at a minimum. Appendix A includes the detailed requirements for the annual inspections and maintenance of the covers.

3.2 Fencing

Physical maintenance requirements for the Site will include maintenance of the fence to prevent access into the area outside of the development area. The Property owner will be responsible for maintenance inspections, performing maintenance, and for maintaining all inspection records. Site inspections for the fence will be performed annually, at a minimum. Appendix A includes the detailed requirements for the annual inspections and maintenance of the fence.

3.3 Vapor Mitigation System for New Buildings

Inspections and maintenance of vapor mitigation systems will be conducted in accordance with the Maintenance Plan (Appendix A).

Maintenance will include repairs to any problems observed during the annual inspections. Upon the observation of a problem, the situation will be evaluated and the appropriate response or repair will be initiated in a timely manner. The method of repair will be recorded in the inspection form as follow-up documentation.

4. REFERENCES

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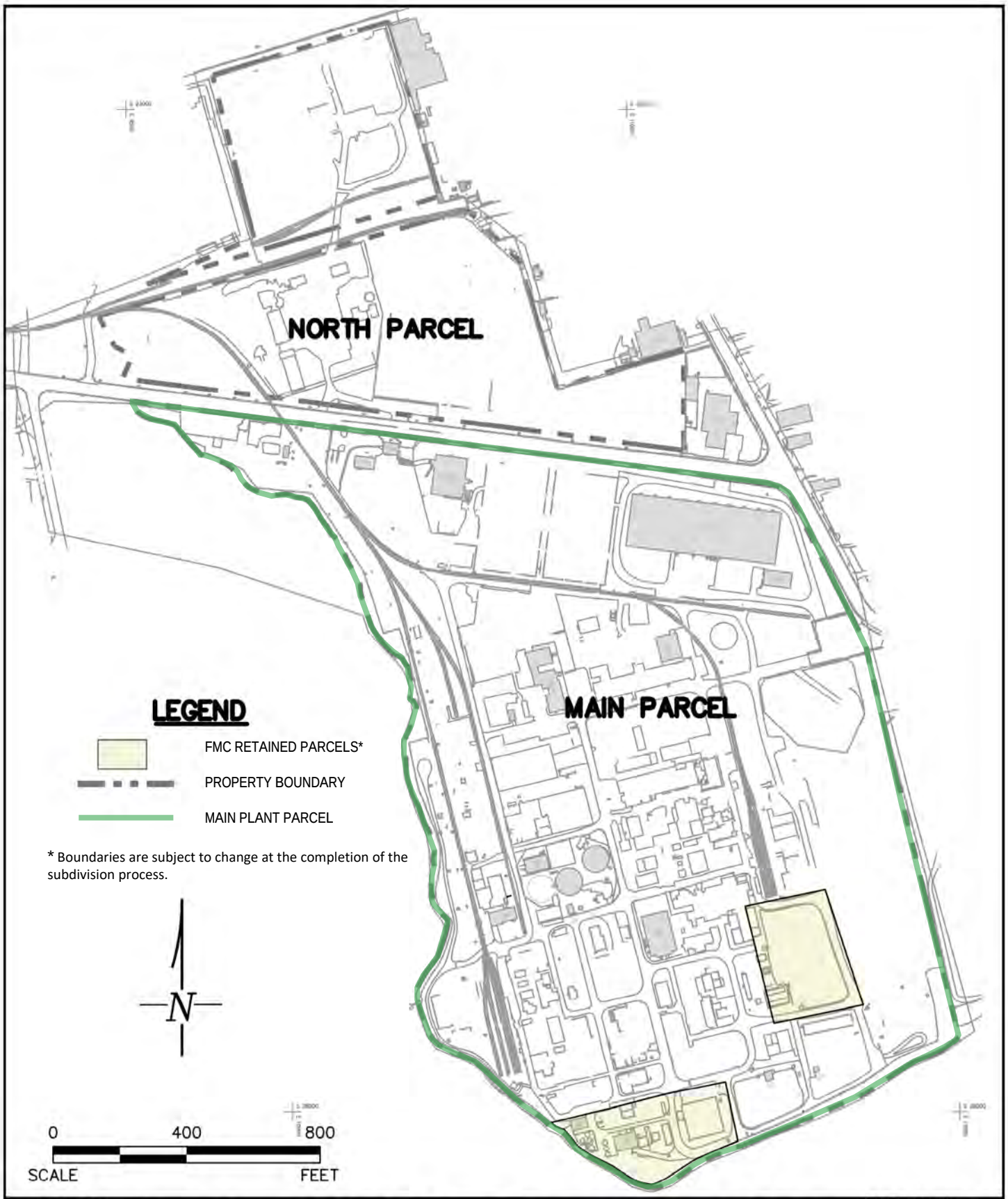
USEPA, 2019a. Email to Mr. Doug Groux of FMC providing revised language for use in the Environmental Covenants indicating that if a field demonstration indicates vapor intrusion does not pose a threat to human health, a vapor mitigation control system will not be needed. 19 November 2019.

FIGURES



10/16/19

FMC BALTIMORE SITE

FORMER AGRICULTURAL PRODUCTS GROUP
BALTIMORE, MARYLAND

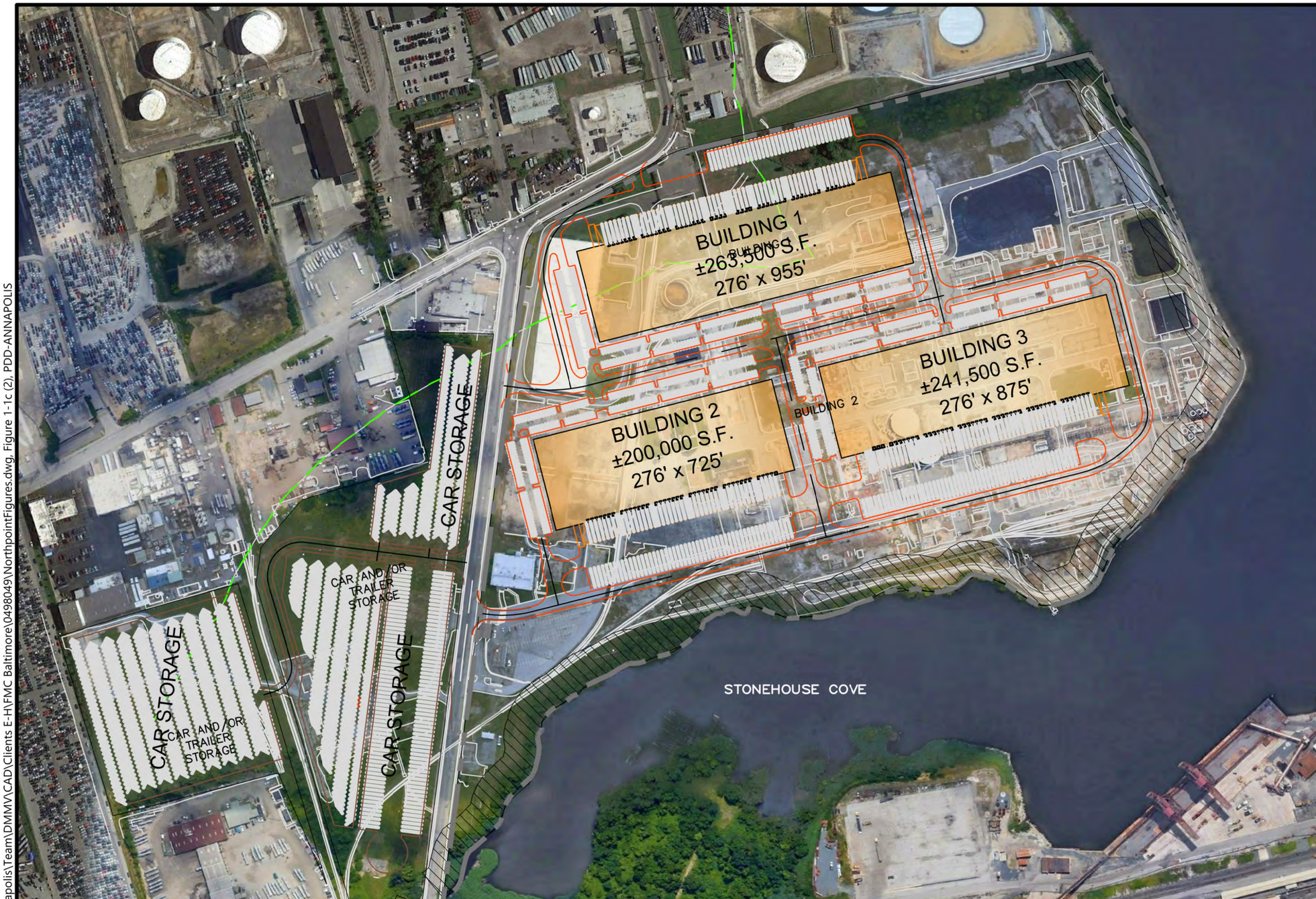
ERM®

Environmental Resources Management

CADD Review

CHK'D

FIGURE 1



LEGEND—GENERAL

- 100' CRITICAL AREA BUFFER
- ASPHALT
- 1,000' CRITICAL AREA BUFFER
- PROPERTY BOUNDARIES

N

0 300 600
SCALE FEET

Drawn By PDD	ERM®	PROPOSED REDEVELOPMENT FORMER AGRICULTURAL PRODUCTS GROUP FACILITY BALTIMORE, MARYLAND	CHK'D RK
CADD Review ME			0498049
Date Drawn/Rev'd 9/20		Environmental Resources Management	FIGURE 2

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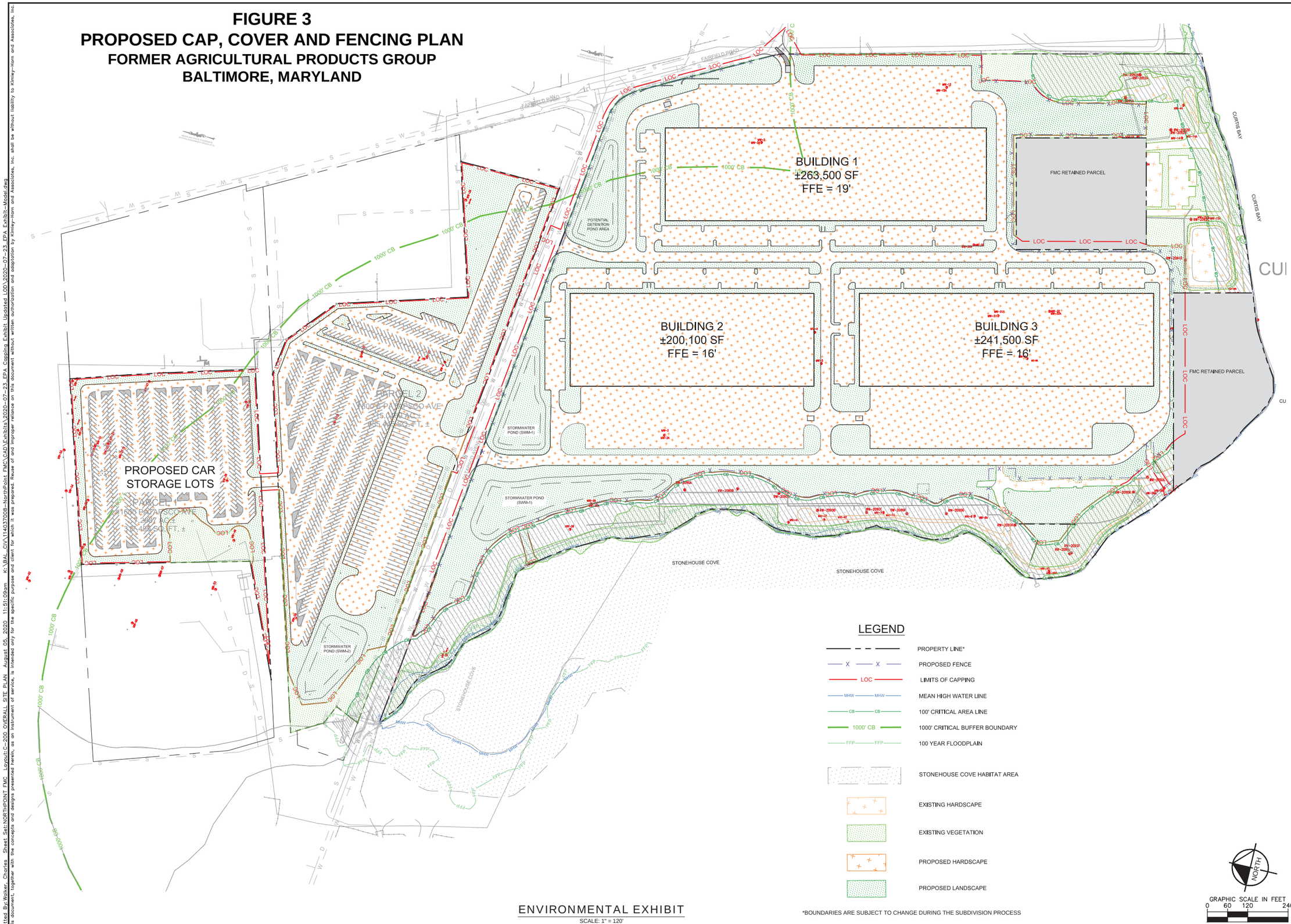
FIGURE 3
PROPOSED CAP, COVER AND FENCING PLAN
FORMER AGRICULTURAL PRODUCTS GROUP
BALTIMORE, MARYLAND



ENVIRONMENTAL EXHIBIT
SCALE: 1" = 120'

No.	REVISIONS	DATE	BY

Kimley»Horn
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1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

KHA PROJECT	114037008
DATE	08/05/2020
SCALE	AS SHOWN
DESIGNED BY	CDW
DRAWN BY	CDW
CHECKED BY	NJL

ENVIRONMENTAL EXHIBIT

NORTHPOINT FMC
BALTIMORE CITY MARYLAND

SHEET NUMBER
EXHIBIT

Plotted By:Walker, Charles Sheet Set:NORTHPOINT FMC Layout:C-200 OVERALL SITE PLAN August 05, 2020 11:51:09am K:\BAL_CIV\114037008-NorthPoint FMC\CAD\Exhibits\2020-07-23_EPA Capping Exhibit Updated LOD\2020-07-23_EPA Exhibit-Model.dwg
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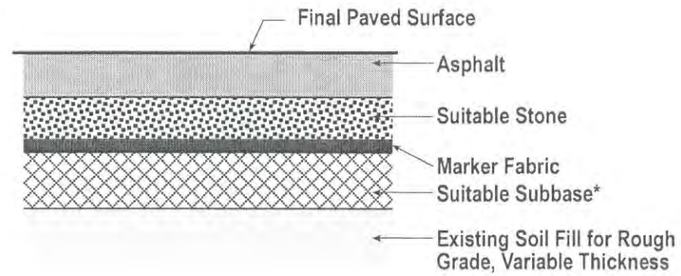
TYPICAL SITE COVER AND UTILITY DETAILS

A. Asphalt Pavement

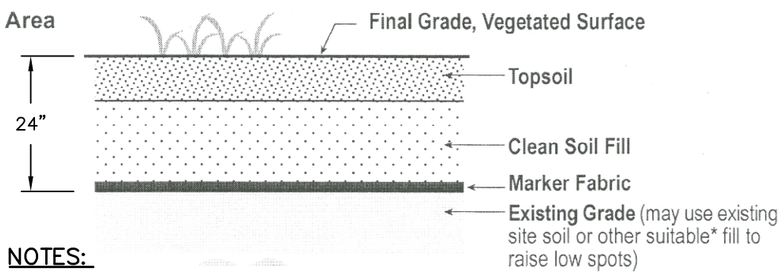


NOTES:

1. MARKER FABRIC SHALL BE PLACED BELOW THE AGGREGATE SUBBASE AS SPECIFIED HEREIN.

2. FINAL THICKNESSES TO BE DETERMINED UPON FINAL DESIGN, INCLUDING EVALUATION OF GEOTECHNICAL DATA AND TRAFFIC FLOW.

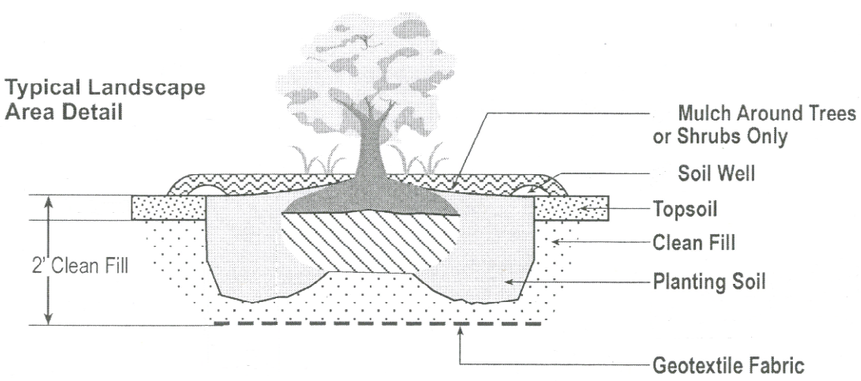
B. Landscaped Area



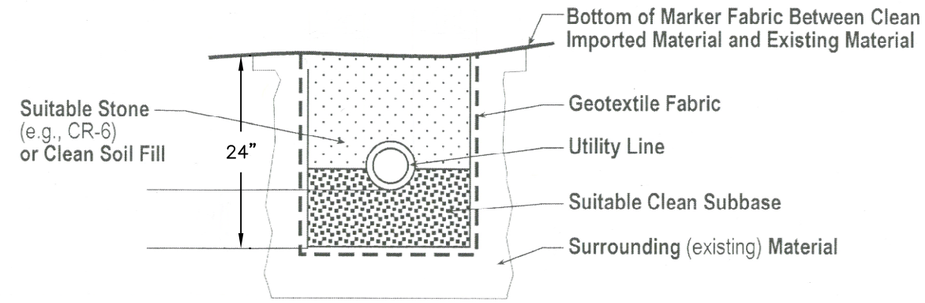
NOTES:

1. MARKER FABRIC SHALL BE PLACED BELOW 2 FEET OF SOIL COVER AND ABOVE EXISTING GRADE AS SPECIFIED HEREIN.

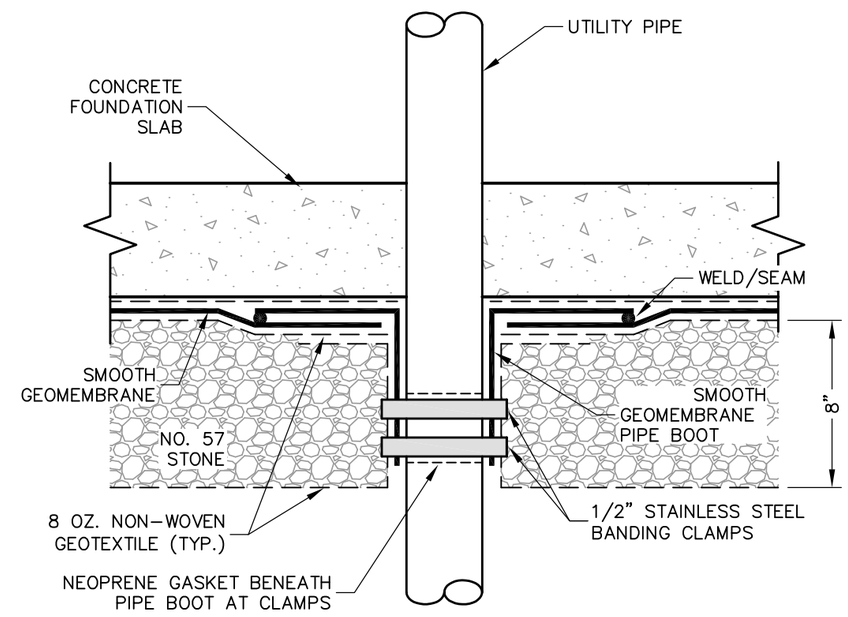
C. Typical Landscape Area Detail



D. Typical Shallow Utility Installation Detail



E. Typical Utility Penetration Detail



Note: Not to scale. Not for construction.

* Suitable fill/sub base below the geotextile marker fabric may include recycled demolition debris generated by on-site demolition activities.

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CADD Review AK			0118642
Date Drawn/Rev'd 2/3/11		Environmental Resources Management	FIGURE 4

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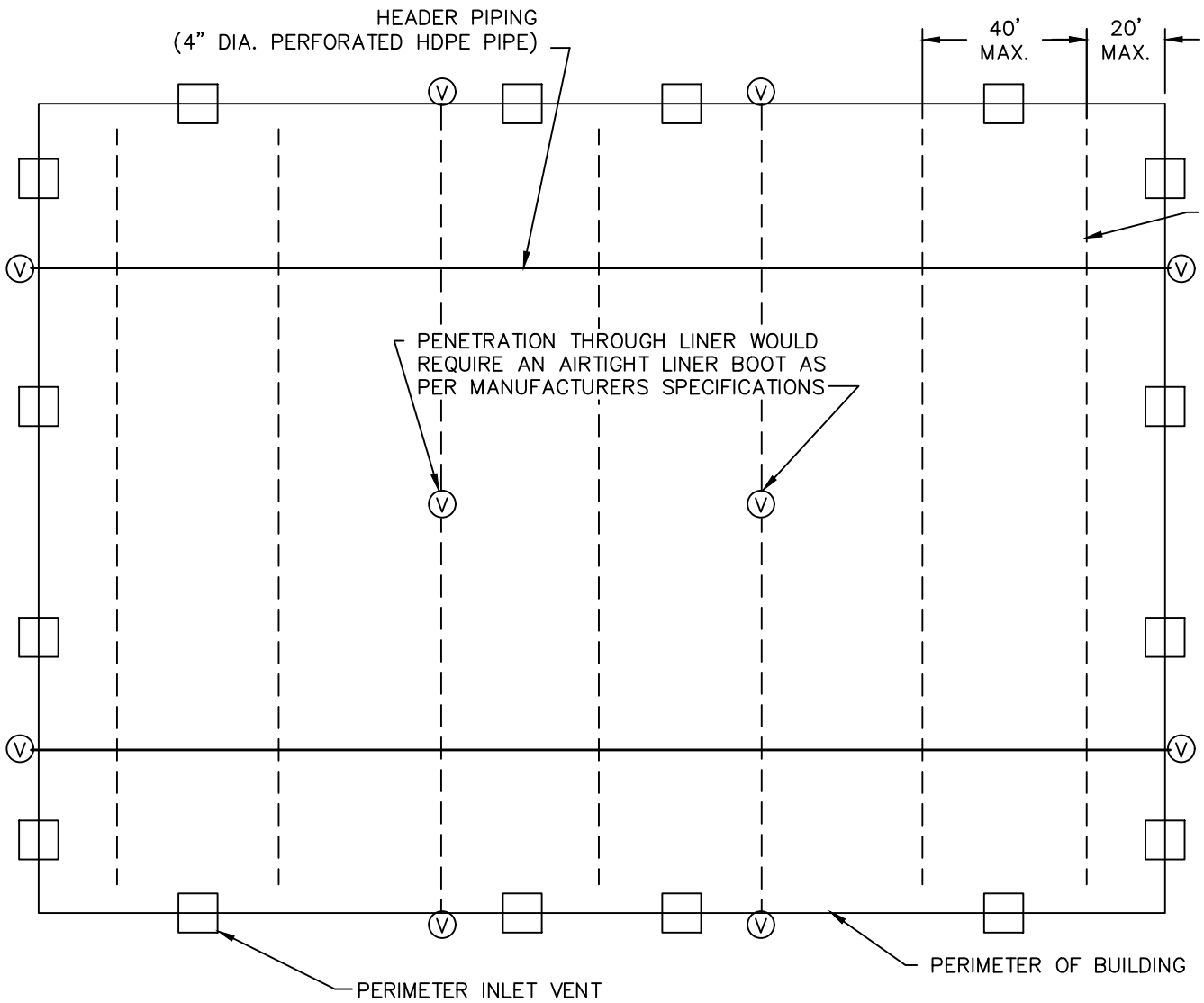
TYPICAL SSV MANAGEMENT SYSTEM PLAN



LEGEND

PERIMETER INLET VENT

(V) VENT

NOTES:

1. 20'–0" MAXIMUM SPACING BETWEEN EDGE OF BUILDING AND LATERAL PIPES.

2. 40'–0" MAXIMUM SPACING BETWEEN ADJACENT LATERAL PIPES.

3. VENTS SHALL BE LOCATED SUCH THAT ALL SLAB SURFACES ARE WITHIN 100 FEET OF A VENT. INTERIOR VENTS SHALL ONLY BE PLACED AS NEEDED TO ACCOMODATE THIS REQUIREMENT. OTHERWISE, PERIMETER VENTS SHALL BE UTILIZED.

4. VENT RISERS SHALL BE AT LEAST 10 FEET FROM WINDOWS, DOORS AND ALL AIR INTAKES.

5. TO THE EXTENT PRACTICAL, INLET VENTS SHALL BE EVERY 50 FEET.

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CADD Review FGB			0340126
Date Drawn/Rev'd 8/25/16		Environmental Resources Management	FIGURE 5

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TYPICAL SSV MANAGEMENT SYSTEM DETAIL

NOTES:

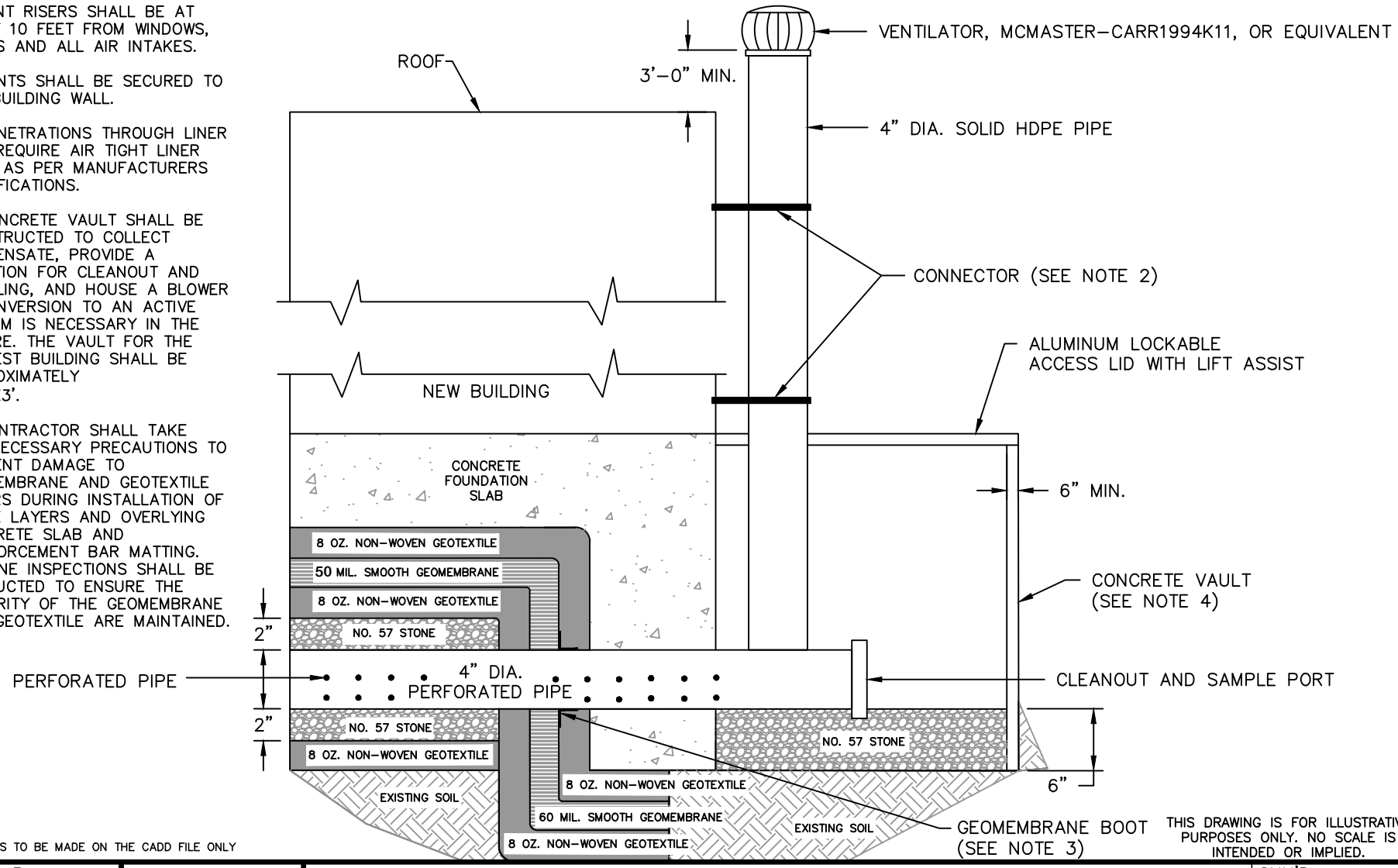
1. VENT RISERS SHALL BE AT LEAST 10 FEET FROM WINDOWS, DOORS AND ALL AIR INTAKES.

2. VENTS SHALL BE SECURED TO THE BUILDING WALL.

3. PENETRATIONS THROUGH LINER WILL REQUIRE AIR TIGHT LINER BOOT AS PER MANUFACTURERS SPECIFICATIONS.

4. CONCRETE VAULT SHALL BE CONSTRUCTED TO COLLECT CONDENSATE, PROVIDE A LOCATION FOR CLEANOUT AND SAMPLING, AND HOUSE A BLOWER IF CONVERSION TO AN ACTIVE SYSTEM IS NECESSARY IN THE FUTURE. THE VAULT FOR THE LARGEST BUILDING SHALL BE APPROXIMATELY 4'X4'X3'.

5. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO GEOMEMBRANE AND GEOTEXTILE LAYERS DURING INSTALLATION OF THESE LAYERS AND OVERLYING CONCRETE SLAB AND REINFORCEMENT BAR MATTING. ROUTINE INSPECTIONS SHALL BE CONDUCTED TO ENSURE THE INTEGRITY OF THE GEOMEMBRANE AND GEOTEXTILE ARE MAINTAINED.



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CADD Review FGB			0340126
Date Drawn/Rev'd 8/25/16		Environmental Resources Management	**FIGURE 6**

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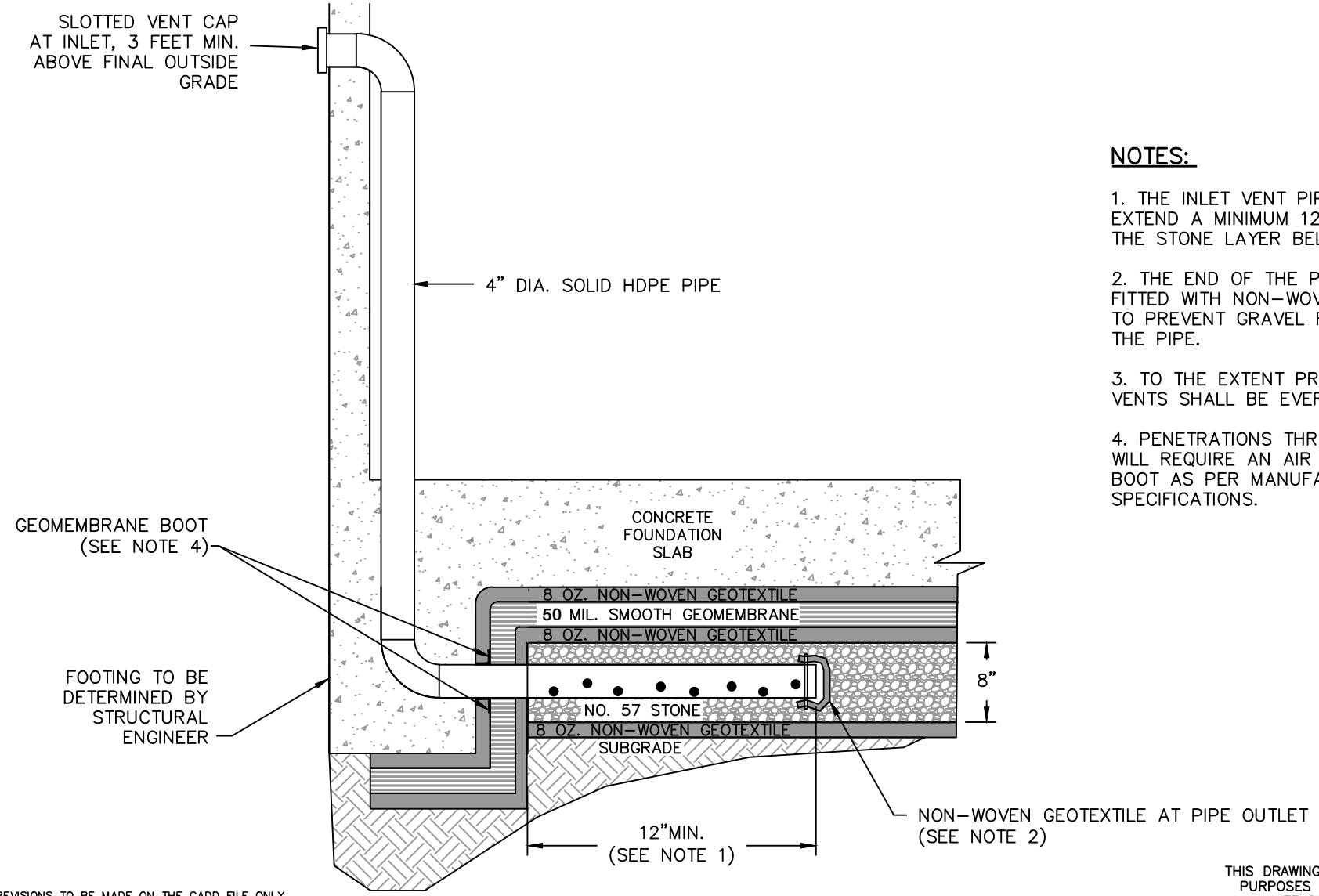
TYPICAL PERIMETER INLET VENT DETAIL



NOTES:

1. THE INLET VENT PIPE SHALL EXTEND A MINIMUM 12 INCHES INTO THE STONE LAYER BELOW THE SLAB.

2. THE END OF THE PIPE SHALL BE FITTED WITH NON-WOVEN GEOTEXTILE TO PREVENT GRAVEL FROM ENTERING THE PIPE.

3. TO THE EXTENT PRACTICAL, INLET VENTS SHALL BE EVERY 50 FEET.

4. PENETRATIONS THROUGH LINER WILL REQUIRE AN AIR TIGHT LINER BOOT AS PER MANUFACTURERS SPECIFICATIONS.

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CADD Review FGB			0340126
Date Drawn/Rev'd 8/25/16		Environmental Resources Management	**FIGURE 7**

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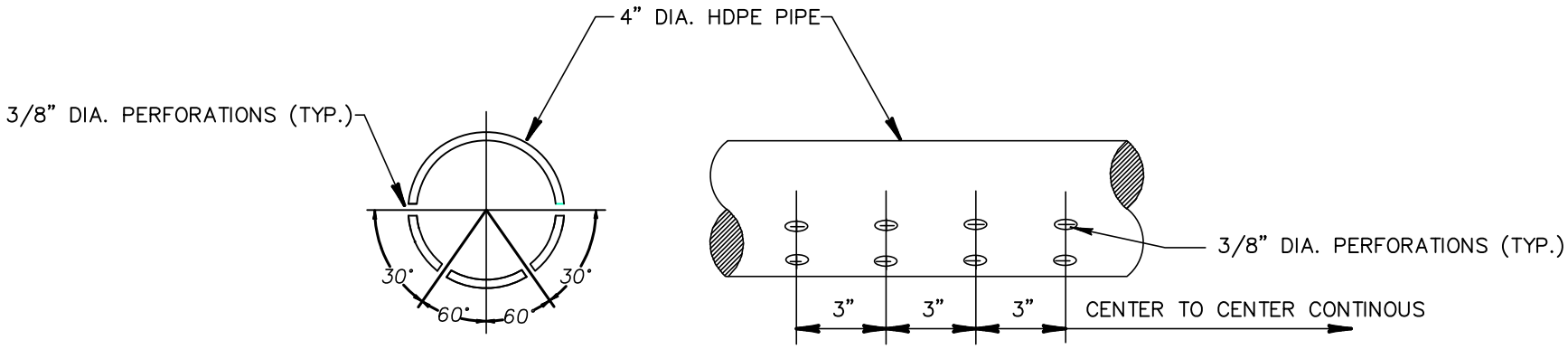
TYPICAL VAPOR COLLECTION PIPE PERFORATION DETAIL



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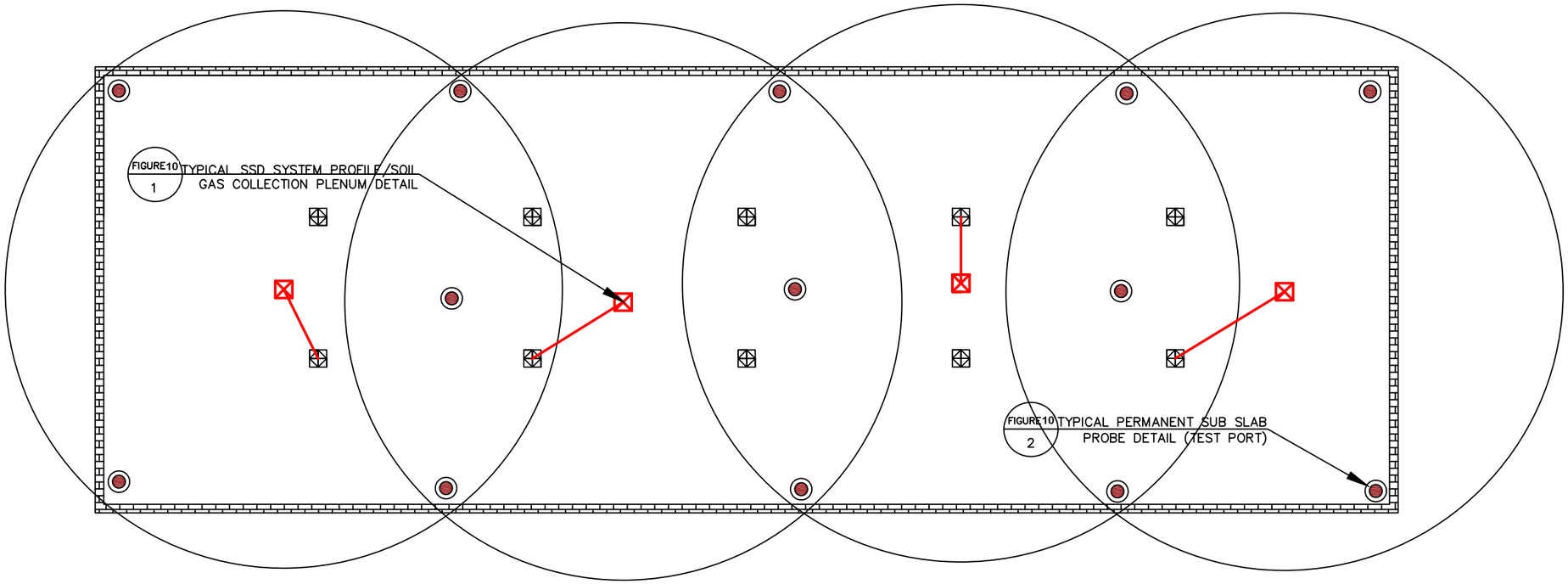
CADD Review FGB			0118642
Date Drawn/Rev'd 09/29/2010		Environmental Resources Management	**FIGURE 8**



LEGENDS:

- WAREHOUSE SUPPORT COLUMN
- GAS COLLECTION PLENUM
- GAS COLLECTION PLENUM– RADIUS OF INFLUENCE
- PERMANENT SUB SLAB PROBE

NOTES:

1. SUB–SLAB DEPRESSURIZATION (SSD) SYSTEM BLOWER SHOULD BE INSTALL ON THE ROOF.
2. GAS COLLECTION PLENUM EXHAUST PIPE SHOULD BE PROTECTED AGAINST THE WAREHOUSE.
3. SSD SYSTEM AND PIPE SHOULD BE LABELED WITH THE PURPOSE OF THE SYSTEM, AS WELL AS THE NAME AND PHONE NUMBER OF THE DESIGNATED CONTACT IN CASE THERE ARE PROBLEMS.
4. SSD SYSTEM SHOULD MAINTAIN MINIMUM PRESSURE DIFFERENTIAL OF 0.004 INCH OF WATER COLUMN THROUGHOUT THE BUILDING FOOTPRINT.
5. HORIZONTAL EXHAUST PIPE SHOULD SLOPE TOWARD THE SUCTION PONITS.
6. SSD SYSTEM BLOWER SHOULD EXHAUST
   a. AT LEAST 12 INCHES ABOVE THE HIGHEST EAVE OF THE ROOF.
   b. AT LEAST 10 FEET AWAY FROM ANY OPENING THAT IS LESS 2 FEET BELOW THE EXHAUST POINT.
   c. 10 FEET FROM ANY ADJOINING OR ADJACENT BUILDINGS, OR HVAC INTAKES OR SUPPLY REGISTER.
5. GAS COLLECTION PLENUM RADIUS OF INFLUENCE (ROI) DEPEND UPON THE PIPE SIZE. BASED ON ANSI CC–1000 STANDARD, FOLLOWING ARE THE ALLOWABLE ROI FOR DIFFERENT SIZE PIPE:
   a. 3 INCHES PIPE – 34 FEET ROI
   b. 4 INCHES PIPE – 45 FEET ROI
   c. 6 INCHES PIPE – 65 FEET ROI

TITLE

TYPICAL SSD MANAGEMENT SYSTEM PLAN

PREPARED FOR

FMC BALTIMORE, MD

Environmental Resources Management

FIGURE

9

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US	1" = 30'	03/03/2020	0542128

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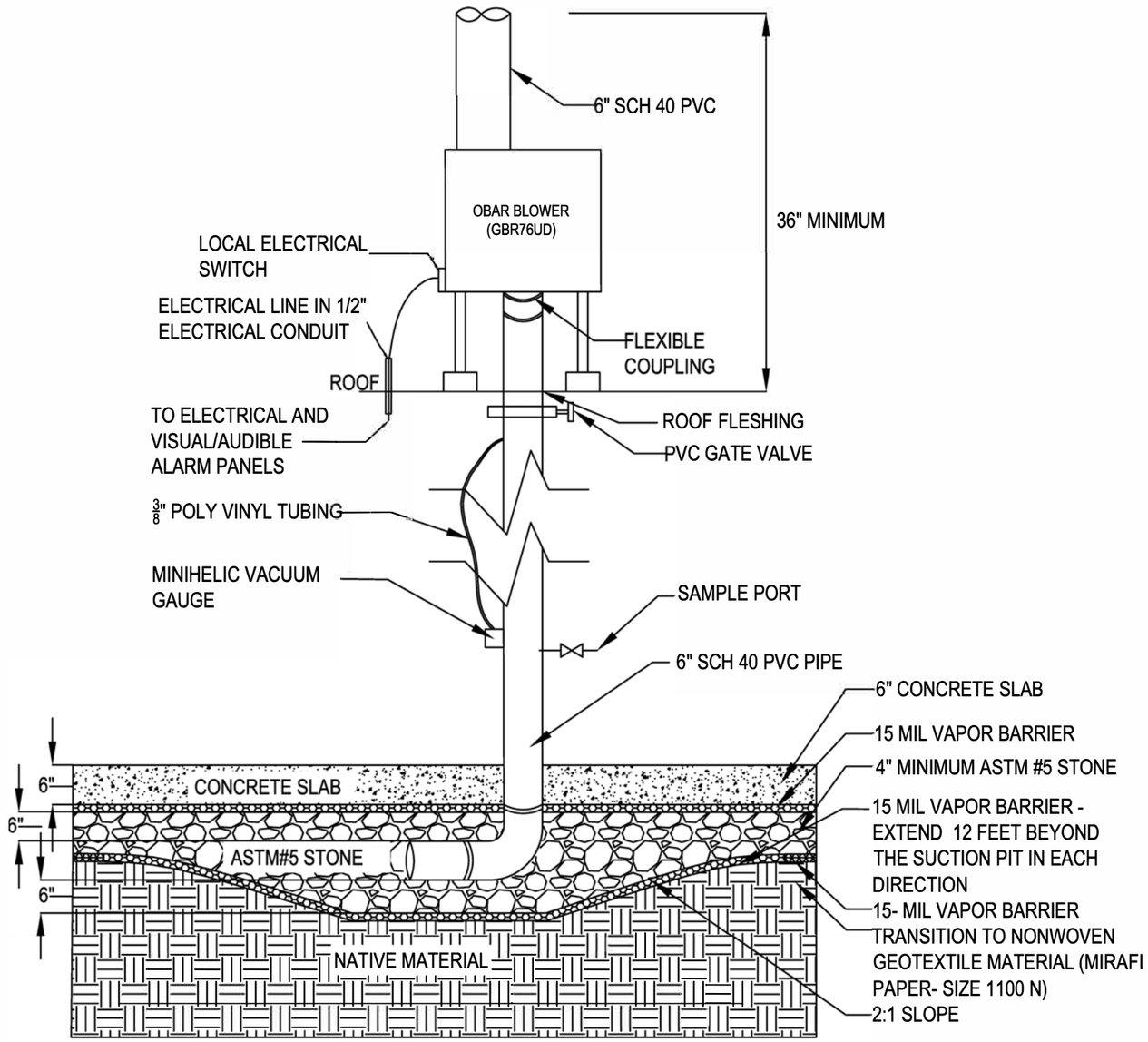
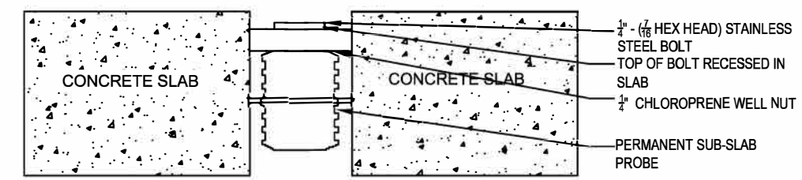


TYPICAL SSD SYSTEM PROFILE/ SOIL GAS COLLECTION PLENUMS DETAILS

NOT TO SCALE



TYPICAL PERMANENT SUB SLAB PROBE DETAILS

NOT TO SCALE

TITLE

TYPICAL SSD MANAGEMENT SYSTEM DETAIL

PREPARED FOR

FMC BALTIMORE, MD

Environmental Resources Management

ERM

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APPENDIX A MAINTENANCE PLAN FOR COVERS, FENCING AND VAPOR MITIGATION SYSTEMS

APPENDIX A - MAINTENANCE PLAN FOR COVERS, FENCING AND VAPOR MITIGATION SYSTEMS

1. INTRODUCTION

The purpose of the Maintenance Plan is to identify procedures to identify changes in site conditions that could diminish the long-term function or integrity of the engineered covers, fencing and subslab soil vapor mitigation systems, and make necessary repairs to provide for long-term protectiveness. The property owner will be responsible for fulfilling the long-term maintenance requirements for the covers, fencing and subslab soil vapor mitigation systems described herein.

The Maintenance Plan consists of four parts:

1) **Maintain Long-term Integrity of Engineered Covers**. Conduct annual inspections to identify and document degradation of concrete floors, pavement or landscape soil cover time that could diminish the protectiveness of the covers, and make necessary repairs;
2) **Maintain Long-term Integrity of Fencing**. Conduct annual inspections to identify and document damage to or degradation of fencing over time that could diminish the protectiveness of the fence, and make necessary repairs;
3) **Maintain Long-term Integrity of Vapor Mitigation Systems**. Conduct annual inspections to identify and document changes in the floors of the building due to purposeful penetrations and to above grade components such as pipes and ventilators to identify degradation over time that could diminish the effectiveness of the soil vapor mitigation system, and make necessary repairs; and
4) **Annual Reporting**. Document annual inspections and repairs.

2. SITE COVER

2.1 Inspection

On an annual basis, conduct the following inspections of concrete slabs, asphalt pavement and landscape soil covers:

- Inspect the concrete floor of the buildings and asphalt pavement to determine if modifications have occurred since the previous inspection, including the formation of cracks, heaving, settlement, spalling, or other openings. Specifically, inspection will include, but not be limited to, visual observations to determine the occurrence of the following items:
    - Differential settlement or subsidence;
    - Erosion, cracking, discoloration, formation of potholes, and/or spalling;
    - Condition of expansion or control joints (i.e., checking for settlement or cracking of grout/caulk); and
    - Stability or structural failing.
- Inspections will be performed by traversing the landscaped areas and observing the surface conditions. Landscaped areas will be inspected to evaluate the health and condition of plants, signs of mortality, animal burrows, erosion, or other features that may compromise the cap integrity. Of particular importance would be any feature such as an uprooted tree or excess erosion that would compromise the thickness of the cover or functional integrity of the cap.

2.2 Maintenance

Maintenance will include making the necessary repairs to the items identified during the inspections of concrete slabs, asphalt pavement and landscape soil covers. Following the discovery of areas requiring maintenance during the inspection, the condition will be assessed, and the repairs listed below will be completed within 90 days of the observance.

- Repairs to concrete slabs could consist of using sealants and asphalt patch, including cement, silicon, or epoxy fillers, to fill cracks.
- Repairs to asphalt pavement could consist of using asphalt patch to repair potholes, or recovering areas with fresh asphalt.
- Repairs to landscape areas will include placement of imported soil to backfill holes to grade. Imported soil will meet the imported soil requirements for use as cover material set forth in the Soil Management Plan.

Maintenance activities will be documented and presented in the Annual Progress Report submitted to EPA.

3. FENCING

3.1 Inspection

On an annual basis, conduct the following inspections of the fence at the limit of the development and the shoreline fence:

- Inspect the posts to determine if they are plumb and properly anchored in cement;
- Inspect the rails to determine if they are bent, dented or out of alignment;
- Inspect the wire mesh for holes in the mesh, presence of rust, and sufficient tension;
- Inspect the fasteners, rings, and wire ties for wear or damage;
- Inspect the gates to make sure they are operational, latch properly, and locks are secure; and
- Inspect the barbed wire for breaks.

3.2 Maintenance

Maintenance will include making the necessary repairs to the items identified during the inspections of fences. Following the discovery of areas requiring maintenance during the inspection, the condition will be assessed and the repairs listed below will be completed within 90 days of the observance.

- Repairs to the fence, gates and barbed wire should be made using materials identical to or superior to those used in the original construction.

Maintenance activities will be documented and presented in the Annual Progress Report submitted to EPA.

4. VAPOR MITIGATION SYSTEM

4.1 Inspection

On an annual basis, conduct the following inspections of the building floors to mitigate the release of vapor:

- Inspect the floor of the building to determine if modifications have occurred since the previous inspection, including the formation of cracks, heaving, or other openings in the concrete floor. Specifically, inspection of the concrete floor will include, but not be limited to, visual observations to determine the occurrence of the following items:
    - Differential settlement or subsidence;
    - Erosion, cracking, discoloration, and/or spalling;
    - Condition of expansion or control joints (i.e., checking for settlement or cracking of grout/caulk); and
    - Stability or structural failing.
- Inspect the locations where utilities, such as water, sewer, communication, gas or electric lines, have penetrated the floor and make sure that the locations of the utility penetration through the floor is sealed to prevent upward air flow;
- Inspect floor drains and sumps and make sure that the locations are sealed to prevent upward air flow;

- Determine if new utilities, equipment or floor drains were installed through the concrete floor, and inspect the floor penetration locations to make sure the utility penetration is sealed to prevent air flow;
- Identify measures to be taken to protect the integrity of the vapor barrier in the event a new floor penetration is determined to be necessary;
- Inspect all visible components of the soil vapor barrier and passive venting system, including piping and seals to determine if pipes or seals have been modified, are degrading, or show signs of blockage; and
- Determine changes in ownership, tenant, use and occupancy, or other building conditions.

On an annual basis, conduct the following inspections of the integrity of the pipe vents and ventilators, and blowers if installed:

- Inspection of the vertical pipe vents will include, but not be limited to, visual observations to determine the occurrence of any of the following items:
    - Cracks;
    - Integrity of the connections to the structure;
    - Integrity of the fittings; and
    - Plumb alignment.
- Inspection of the ventilators will include, but not be limited to, visual observations to determine the occurrence of any of the following items:
    - Cracks;
    - Clogged
    - Ability to spin freely; and
    - Integrity of the attachment to the vertical pipe vent appropriately.
- Inspection of the intake inlets will include, but not be limited to, visual observations to determine the occurrence of any of the following items:
    - Clogged grate;
    - Integrity of the grate;
    - Cracks;
    - Integrity of the connections to the structure;
    - Integrity of the fittings; and
    - Plumb alignment.
- Inspection of the condensate vaults will include, but not be limited to, visual observations to determine the occurrence of any of the following items:
    - Lid opens/closes appropriately;
    - Cracks;
    - Lock is present, if required;
    - Ponding; and
    - Accumulation of condensate or other liquids in horizontal pipe or vault.
- Inspection of the blowers associated with an active system if one is installed to determine the occurrence of any of the following items:
    - Excessive noise or vibration, which is an indication of ball bearing wear and need for replacement;
    - Presence of moisture or corrosion in wiring and mechanical components;
    - Operating temperature of blower fall within the prescribed limits; and
    - Vacuum gauges fall to zero when system is off.

4.2 Maintenance

Maintenance will include necessary repairs to the observed inspection items. Repairs to the floor or utility penetration seals will be made to make sure that upward air flow from beneath the floor is minimized. Following the discovery of areas requiring maintenance during the inspection, the condition will be assessed and appropriate repairs will be initiated within 90 days of the observance. Repairs could consist of using a variety of sealants, including cement, silicon, or epoxy fillers, to fill cracks and improve

seals around utility or floor drain locations. Maintenance activities will be documented and presented in the Annual Progress Report submitted to EPA.

Repairs to pipes and vaults will address the items identified during the inspection by replacing or repairing broken or degraded materials.

5. DOCUMENTATION

FMC submits an Annual Progress Report to the USEPA by January 30 each year, pursuant to Section II of the Corrective Action Permit. The Annual Progress Report includes a summary of activities taken in the prior year to comply with the requirements of the Corrective Measures Implementation Work Plans. The Property Owner is required to submit to FMC, no later than December 31 of each year, a summary of activities conducted to comply with the requirements of this Maintenance Plan. The information presented in the Annual Progress Report will include, but not be limited to, the following:

- Document the results of the inspection and repairs to the concrete floors, pavement and landscape covers, including submittal of photographs, and inspection reports. The inspection report will include a description of necessary repairs of the concrete floor, pavement and landscape soil covers.
- Document the results of the inspection and repairs to the site fencing, including submittal of photographs, and inspection reports. The inspection report will include a description of necessary repairs of the fence.
- Document the results of the annual inspection and repairs to the concrete floors that overlay the soil vapor mitigation system, including submittal of photographs, and inspection reports. The inspection report will include a description of any repairs made to the floor, floor penetrations, or vent pipes.

In addition, the property owner (if not FMC) performing the work shall notify FMC within 24 hours of any damage occurring to the caps and prior to initiating any intrusive activities that involves penetration of a constructed cap. Work activities that involve disturbing the cap and soils beneath shall be documented in a Completion Report prepared and submitted by the property owner, including such details, at a minimum, as:

- Dates work performed;
- Work location, with maps and figures;
- Description of work activities performed; and
- Documentation that all material was properly handled in accordance with the SMP.

The Completion Report shall be submitted to FMC within 60 days of completing the fieldwork.

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

October 19, 2016

SENT VIA EMAIL AND OVERNIGHT MAIL

Mr. William Wentworth (3LC20)
RCRA Corrective Action
Office of Remediation
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Corrective Measures Implementation (CMI) Work Plan for the North Parcel
Permit for Corrective Action, EPA ID No MDD 003071875
FMC Corporation, Former Agricultural Products Group Facility
1600 East Patapsco Avenue, Baltimore, Maryland 21226 (Site)

Dear Mr. Wentworth:

FMC Corporation has enclosed three (3) copies of the document titled *Corrective Measures Implementation (CMI) Work Plan for the North Parcel (50 Percent Design Submittal)* for the referenced site. The report was prepared in accordance with Part II.B.1 of the Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) signed by the U.S. Environmental Protection Agency on January 30, 2013, and in response to USEPA's February 8, 2016 approval of the January 21, 2016 document titled *Corrective Measures Study Report for the North Parcel*.

The CMI Work Plan presents the design information equivalent to the 50% design phase. FMC is submitting this CMI Work Plan to USEPA as the 50% design and as the sole design submittal rather than iterative design submittals because the design involves excavation, construction of a cover in conjunction with redevelopment, and construction of a soil vapor barrier, and therefore an iterative and more detailed design process is not necessary.

If you have any questions regarding the report, please do not hesitate to contact me at (215) 299-6802.

Sincerely,

Douglas Groux

Douglas Groux
Remediation Project Manager

Enclosures (3)
cc: B. Coblentz, Maryland Department of Environment
R. Keating, ERM

FMC Corporation

Corrective Measures Implementation Work Plan for the North Parcel (50 Percent Design Submittal)

Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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LIST OF ACRONYMS

bgs	below ground surface
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CQA	Construction Quality Assurance
DNAPL	Dense Non-Aqueous Phase Liquid
E&S	Erosion and Sedimentation
ERM	Environmental Resources Management
FDRTC	Final Decision and Response to Comments
FMC	FMC Corporation
GWMP	Ground Water Monitoring Plan
GWTP	Ground Water Treatment Plant
HASP	Health and Safety Plan
HDPE	High-density Polyethylene
MDE	Maryland Department of Environmental
MIP	Membrane Interface Probe
NAPL	Non-Aqueous Phase Liquid
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SIR	Site Investigation Report
SMP	Soil Management Plan

SSV	Subslab Venting
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Corrective Measures Implementation (CMI) Work Plan, for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC facility at 1600 East Patapsco Avenue, Baltimore, Maryland (North Parcel). The North Parcel consists of the approximately 23-acre portion of the 90-acre property north of the 67-acre former Main Plant (1701 East Patapsco Avenue). For the purpose of this Work Plan, the Site refers to the 90-acre property and the North Parcel refers to the 23-acre portion of the Site located north of East Patapsco Avenue. Figure 1 shows the footprint of the 23-acre North Parcel relative to the 90-acre property and the off-site adjacent Fleet and Dana properties that contain chlorobenzene-impacted ground water derived from the North Parcel.

The final version of the Corrective Measures Study (CMS) Report for the North Parcel (ERM, 2016), submitted to USEPA on 21 January 2016 and approved by USEPA in a letter dated 8 February 2016 (USEPA, 2016), recommended corrective measures to address the presence of volatile organic compounds (VOCs) in soil and ground water on the North Parcel and two adjacent off-site properties. The corrective measures described herein only apply to the North Parcel and off-site properties impacted by soil and ground water conditions on the North Parcel.

The corrective measures described herein will be implemented in accordance with:

- USEPA's Region III Final Decision and Response to Comments (FDRTC) issued on 14 April 2011 (USEPA, 2011); and
- Section II.B.1 of USEPA's Resource Conservation and Recovery Act (RCRA) Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) issued on 30 January 2013 (USEPA, 2013).

1.1 BACKGROUND

Demolition and decommissioning of the Site was completed in November 2009. All tanks, process lines and other appurtenances were removed as part of the demolition project. Concrete debris, slabs, foundations and subsurface lines and piping remain on the North Parcel.

The North Parcel will be redeveloped for industrial or commercial purposes. However, specific redevelopment plans have not yet been identified and could involve construction of buildings or installation of an asphalt cover or landscaped areas over all or parts of the North Parcel.

Institutional controls will be placed on the Main Plant property and portions of the North Parcel in accordance with the USEPA-approved Use Control Plan (ERM,

2013). Part II.B.4.a. of the Permit requires compliance with the following institutional controls at the Site (Site and Facility are used interchangeably in the Permit):

1. Ground water beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by USEPA in the FDRTC;
2. Well drilling is prohibited at the Facility without prior USEPA approval, to prevent inadvertent exposure to the contaminated ground water and adverse effects to the Final Remedy selected by USEPA in the FDRTC;
3. The Facility shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use;
4. All earth moving activities on Facility property, including construction and drilling, shall be done in accordance with the USEPA and Maryland Department of Environment (MDE)-approved Soil Management Plan (SMP, ERM, July 2010); and
5. A vapor control system, the design of which shall be approved in advance by USEPA, shall be installed in each existing structure and each new structure constructed at the Facility, not including existing structures that are idle or will not be reused.

With respect to item 4, FMC will require any developer at the Site to manage potential soil and ground water exposure to construction workers by adhering to the SMP. The SMP describes the procedures to: 1) handle, stockpile or containerize excavated soil or extracted ground water; 2) sampling and analytical procedures to characterize excavated soil or extracted ground water; 3) methods for the disposition of contaminated soils or treatment of extracted ground water in accordance with appropriate state and federal environmental laws and regulations; and 4) stockpiling of un-impacted soils for future use as fill material for construction.

The risk evaluation presented in the CMS Report evaluated risk to site workers and construction workers on the northern six acres of the North Parcel, the southern approximately 17 acre of the North Parcel, and the off-site parcels separately.

- Northern Six Acres. A baseline risk assessment was deemed unnecessary because the use controls in the form of the land use covenants recorded on the property deed will adequately protect human health.
- Southern 17 Acres. The risk evaluation did not indicate an unacceptable human health cancer or non-cancer risks to future commercial or construction workers.
- Off-site Properties. Ground water impacts were identified on the adjacent Dana and Fleet properties (Figure 1). The risk evaluation results indicated

that exposure to perched ground water could pose an unacceptable human health non-cancer risk to future construction workers and that vapor intrusion could pose an unacceptable human health cancer and non-cancer risk to future commercial workers in a building placed above the off-site ground water impacts.

The results of the risk evaluation in the CMS Report demonstrated that:

1. Corrective measures are necessary on the northern six acre property and off-site properties to mitigate an unacceptable potential human health risk to future construction workers from working in a trench, and site workers from vapor intrusion into a building; and
2. There are no unacceptable risks to Site commercial workers or construction workers on the 17-acre southern portion of the North Parcel that require mitigation. Thus, use controls related to the applicability of the SMP to protect construction workers and a vapor barrier to protect Site commercial workers are not warranted.

In accordance with Section 5.1 of the Use Control Plan, FMC requested USEPA to accept these proposed modifications to the use controls for the 17-acre portion of the North Parcel. Additionally, a protective cover over this area is not necessary to mitigate exposure of Site workers to soil. FMC will implement use controls within this area to ensure wells are not drilled, ground water is not used, and the property is used only for commercial or industrial purposes.

In the USEPA 18 November 2015 approval letter for the Use Control Plan (USEPA, 2015), USEPA indicated that FMC should conduct a soil gas study to determine if vapor control systems would be necessary in the locations where ground water contamination and vapor intrusion appear not to present a problem. Additionally, USEPA requested in the 18 November letter that FMC prepare a Sampling and Analysis Plan (SAP) to evaluate vapor intrusion concerns on the 17-acre southern portion of the North Parcel. FMC submitted the December 2015 Soil Gas SAP to USEPA (ERM, 2015), and USEPA approved the SAP in a 1 March 2016 email. FMC implemented the soil gas investigation in accordance with the USEPA-approved SAP and submitted the results of the investigation in the 3 May 2016 report titled *Soil Gas Investigation on the 17-acre Southern Portion of the North Parcel* (ERM, 2016a).

The results of the soil gas samples indicated that the presence of VOCs in the soil gas does not pose an unacceptable inhalation risk to future indoor commercial/industrial workers on the 17-acre southern portion of the North Parcel, and mitigation in the form of a vapor barrier is not warranted for any future structure(s). Thus installation of vapor barriers on the 17-acre parcel will not provide additional protection of human health, and would be overly restrictive given Site conditions. Therefore, in accordance with Section 5.1 of the Use Control Plan, FMC requested a modification to the institutional control

requiring the installation of a vapor barrier on the 17-acre southern portion of the North Parcel based on the vapor data presented herein. USEPA (2016a) indicated in the response to the soil gas investigation report that the soil gas does not pose an unacceptable inhalation risk to future commercial/industrial workers based on the current ground water quality data. Further, USEPA (2016a) stated that if future ground water results from monitoring wells on this portion of the property reveal similar or lower concentrations of VOCs, a vapor barrier would not be warranted for a future structure on the 17-acre parcel.

1.2 SUMMARY OF CORRECTIVE MEASURE ALTERNATIVE 2

Based on the USEPA-approved CMS report, corrective measures will only be applied to the five-acre impacted norther portion of the North Parcel. All three areas, including the unrestricted southern portion and the off-site properties require land use controls. Approximately one acre along the western property boundary is proposed to be left as a natural vegetative buffer, and the 17 acre southern portion of the property that borders E. Patapsco Avenue is determined to be un-impacted and can be developed without restrictions to adhere to the SMP and need to install vapor barriers (Figure 2).

Corrective Measure Alternative 2 was recommended in the CMS Report and approved by USEPA, and is the subject of this Work Plan. Figure 2 illustrates the components of the corrective measures; the corrective measures for each area are summarized below.

- Five-acre Portion of the North Parcel:
  - Source Area Remediation - Removal and off-site disposal or on-site treatment of approximately 200 cubic yards of non-aqueous phase liquid (NAPL)-impacted soil and perched aquifer material in the vicinity of well MW-23;
  - Containment – A low permeability cover in the form of an asphalt cap or other cover (i.e. buildings, landscaped areas) will be placed and maintained over five of the six acres of the North Parcel, where perched and shallow ground water contamination is present. Containment with the low permeability cover will prevent direct contact with undisturbed, impacted soils. Additionally, containment will serve to reduce infiltration of rain water into the subsurface, and consequently reduce leaching of contaminants into the underlying perched ground water and potentially improve ground water quality both on-site and off-site over time. The area covered by asphalt or other Site redevelopment features, such as buildings or landscape areas, excludes the landscape buffer along the property boundary; hence the area covered is estimated to be five acres;

- Long-Term Monitoring – Long-term monitoring will be conducted in selected existing on-site and off-site monitoring wells using a portion of the existing monitoring well network; and
- Institutional Controls – The five use controls listed in Section 1.1 above will be recorded for the five-acre portion of the property. The Use Control Plan (ERM, 2013) describes the process for implementing use controls for this portion of the property.

- Off-site Properties. FMC will attempt to record the five use controls listed in Section 1.1 above on the portions of the Dana and Fleet properties that contain impacted ground water to ensure the long-term protection of human health. An off-site use control plan to describe the process to record the use controls on the two off-site properties is included as an appendix to this Work Plan.
- 17-acre Southern Portion. FMC will implement use controls within this area to prevent wells from being drilled, prevent future ground water use, and make sure the property is used only for commercial or industrial purposes. The Use Control Plan (ERM, 2013) describes the process for implementing use controls for this portion of the property. In addition, USEPA indicated that if future ground water results from monitoring wells on this portion of the property reveal similar or lower concentrations of VOCs, a vapor barrier would not be warranted for a future structure on the 17-acre parcel. However, if ground water quality conditions on the 17-acre parcel worsen over time, then a vapor barrier could be warranted, and the design elements included in Section 2.3 for the subslab venting system would apply. The use control for this portion of the North Parcel will need to reflect the need to collect and analyze future ground water quality data to determine if vapor mitigation is necessary for future buildings.

1.3 WORK PLAN PURPOSE

The purpose of the CMI Work Plan is to present the 50 percent design elements for the implementation of the corrective measures on the five-acre northern portion of the North Parcel, and to present the use controls plan for the portions of the Dana and Fleet properties that contain impacted ground water. The Use Control Plan (ERM, 2013) describes the process for implementing use controls on the North Parcel and therefore the use control plan for on-site is not included in this Work Plan.

The CMI design can consist of a conceptual design phase (30%), an intermediate design with plans and specifications (50%), and the development of final plans and specifications (100%). However, the components of the CMI design can be consolidated to streamline the review and approval process in accordance with USEPA's May 1994 RCRA Corrective Action Plan guidance document (USEPA, 1994). This CMI Work Plan presents the design information equivalent to the 50%

design phase. FMC is submitting this CMI Work Plan to USEPA as the 50% design and as the sole design submittal rather than iterative design submittals because the design involves excavation, construction of a cover in conjunction with redevelopment, and construction of a soil vapor barrier, and therefore an iterative and more detailed design process is not necessary.

Furthermore, the final development plan for the northern portion of the North Parcel has not yet been determined. Therefore, the intent of this CMI Work Plan is to provide developers flexibility on how the design criteria for each element of the design are met. The developer will prepare the 90 and 100 percent design submittals for the three design elements. The final design could vary from the typical design elements presented herein as a 50% design submittal, but will adhere to the design basis described herein and meet the overall requirement of protection of future construction and Site workers.

The specific purpose of the CMI Work Plan is four-fold:

1. Present the 50% design for the cover that limits exposure of future Site workers to Site soils and infiltration into ground water through the construction of buildings and concrete, asphalt or landscaped surfaces associated with the redevelopment;
2. Present the 50% design for the subslab vapor mitigation system for future buildings;
3. Present the operations and maintenance requirements to ensure the long-term integrity and protectiveness of the corrective measures; and
4. Present the long-term ground water monitoring and off-site use control plans.

1.4 WORK PLAN ORGANIZATION

The remainder of this report is organized as follows:

- **Section 2 – Corrective Measures 50 Percent Design**. This section describes the proposed design for the excavation, cover materials, and the subslab vapor mitigation system.
- **Section 3 – Support Plans**. This section describes the operations and maintenance plan to ensure the long-term protectiveness of the cover and subslab vapor mitigation system, the sampling and analysis plan, long-term ground water monitoring plan, stormwater management plan, and the off-site use control plan.
- **Section 4 – Project Management Plan**. This section identifies the project team, anticipated schedule, permitting requirements, and health and safety procedures for the implementation of the CMI Work Plan.

2.0 CORRECTIVE MEASURES 50 PERCENT DESIGN

2.1 SOURCE AREA EXCAVATION

2.1.1 Description of Corrective Measure

The primary source area for ground water quality impacts includes the NAPL-impacted soil and perched aquifer material identified in the vicinity of monitoring well MW-23 (Figure 3). Chlorobenzene Dense Non-Aqueous Phase Liquid (DNAPL) was identified in this well. The NAPL source material in this area will be remediated through excavation and off-site disposal.

The analysis of soil quality data in the vicinity of monitoring well MW-23 was described in the Site Investigation Report for the North Parcel (SIR, ERM, 2011a). The source area is defined as the vadose zone and perched zone soils above the gray clay in the vicinity of monitoring well MW-23 where NAPL has been identified in soil and ground water Removing NAPL-impacted soil and perched aquifer material will reduce the volume of contaminated media available for future leaching of chlorobenzene to ground water, and potentially accelerate the restoration of perched ground water quality.

2.1.2 Design Criteria

The objective of the source area excavation is to remove NAP-impacted soil. Thus the criterion for determining whether the soil contains NAPL needs to be a field screening mechanism because there is no firm laboratory procedure for determining the presence and amount of NAPL in soil. Appendix A includes a Sampling and Analysis Plan (SAP) that will be executed to identify a screening mechanism for determining the absence or presence of NAPL. The results from the execution of the SAP will be identify a field screening process to quantify the presence of NAPL in soil and help determine the proposed lateral limits of the excavation. The NAPL field screening mechanism will be used during the excavation. No laboratory confirmation samples are proposed to be collected.

The NAPL field screening will be used to define the lateral and vertical extent of the excavation. However, the vertical extent of the excavation will be limited by the presence of the gray clay layer, which will not be penetrated during the excavation.

Additional design criteria related to backfill compaction will be presented in the 90 percent design submittal.

2.1.3 *Design Basis*

Figure 3 shows that the proposed aerial limits of the excavation area is based on the soil quality data obtained from the membrane interface probe (MIP) investigation (ERM, 2011a). Figure 4 shows the proposed dimensions of the excavation and a typical section for the excavation. The excavation is estimated to be 60 feet long, 10 feet wide and 8 feet deep, which would generate approximately 200 cubic yards of soil (approximately 300 tons). A field screening mechanism to be implemented during removal for determining the absence or presence of NAPL will be identified through the implementation of the SAP presented in Appendix A. The excavation will not penetrate the underlying gray clay confining layer, and thus the presence of the gray clay will define the maximum vertical extent of the excavation.

Any subsurface utilities that could potentially interfere with the excavation will be identified to the extent possible. Utility maps and construction drawings will be used to identify any buried utilities within the excavation area. Maryland Miss Utility service will be contacted prior to mobilization onto the property. In addition, an independent underground utility clearance will be performed on the Site through use of a private utility mark-out service. The location of the underground utilities will be marked prior to initiating excavation activities. Removal of temporary piezometers, monitoring wells, subsurface piping, and stormwater management structures will need to occur in the area to provide access to the NAPL-impacted soil.

Approximately 200 cubic yards of NAPL-impacted soils and aquifer materials will be removed from the excavation area. The soils will be removed down to the gray clay confining layer that separates the perched ground water flow zone from the underlying ground water flow zone. The gray clay is encountered at depths ranging from approximately 6 to 13 feet below ground surface (bgs) and averages approximately 5 feet in thickness.

The excavated material will be managed in accordance with the requirements in the SMP, including stockpiling and sampling excavated soil, and disposition of the excavated soil in an off-site landfill or soil recycling facility that fails to meet the soil cleanup standards in the SMP.

The excavation will be backfilled with either soils excavated from the 17-acre portion of the North Parcel, which are available for unrestricted use, or imported fill material that meets or exceeds the current USEPA regional screening levels for residential soils with appropriate allowances for background concentrations of metals. Two samples of the imported fill source material will be collected and analyzed for comparison to the current USEPA regional screening levels for residential soils. One sample will be collected from the common fill source and one sample from the topsoil source. Compaction requirements will be developed

in the 90 percent design submittal. Some type of soil amendment may be specified in the 90 percent design to support the attainment of the compaction requirements.

Perched ground water will likely flow into the excavation based on the five-foot depth to ground water measured in the temporary piezometers located within the proposed excavation area. In accordance with the SMP, ground water will be pumped out from the excavation, placed in a container and discharged into the Ground Water Treatment Plant (GWTP) for treatment after notifying the GWTP operator.

Appendix B includes the preliminary technical specifications related to the excavation portion of the remedy. Changes to the preliminary specifications and additional specifications will be identified by the developer during the preparation of the final design.

2.2 *COVER*

2.2.1 *Description of Corrective Measure*

The objective of placing the cover on five of the six acres in the northern portion of the North Parcel is to contain the contamination, and eliminate the risk to human health through direct contact. Containment will also impede infiltration through the impacted soil. Containment can be achieved in conjunction with redevelopment by placing a low permeability cover in the form of an asphalt cover to be used as a parking lot, concrete pavement for loading docks or walkways, or a building. Landscape areas in and around a building can be used to a limited extent to allow the developer flexibility in creating an aesthetic commercial or industrial environment around a building; however, no more than 10 percent of the five acre area can be dedicated to landscape areas to ensure that infiltration through the impacted soil area is limited.

Excavation of soil for construction of a building or grading for placement of asphalt or concrete must adhere to the requirements in the SMP, including stockpiling and sampling excavated soil, and disposition of the excavated soil that fails to meet the soil cleanup standards in the SMP.

2.2.2 *Design Criteria*

The primary design criterion for the cover is to reduce risk to future site workers from exposure to impacted soil, and is based on the requirement in the FDRTC Soil Management Strategy which requires that undisturbed soils in areas where soil contamination is likely present be capped and surface water runoff controls be implemented. The secondary design criterion is to impede infiltration

through impacted soil to reduce leaching and improve ground water quality over time. The design basis for the proposed asphalt, concrete or building cover meets both of these criteria.

Additional design criteria related to the placement of asphalt cover, including the thickness and bearing capacity, will be presented in the 90 percent design submittal.

2.2.3 *Design Basis*

Prior to installation of the cover, all of the ground water monitoring wells and piezometers not proposed for inclusion in the long-term ground water monitoring program described in Appendix D will need to be abandoned in accordance with MDE's well abandonment procedures (COMAR 26.04.04.34). Section 2.1.3 in Appendix D includes a description of the well abandonment procedures. The monitoring wells and piezometers retained for long-term monitoring will need to be protected and reconstructed to reflect changes in land use or grade.

In accordance with Detail A on Figure 5, asphalt cover will include the following elements listed from bottom to top:

- Suitable subbase;
- Marker fabric;
- Asphalt base course; and
- Asphalt surface course.

The thicknesses of each layer and placement methods will be determined in the final design and will be based on the proposed end use (i.e., load bearing) and geotechnical characteristics of the native materials.

In accordance with Detail B on Figure 5, concrete pavement will include the following elements listed from bottom to top:

- Suitable subbase;
- Marker fabric;
- Gravel base; and
- Final pavement.

The thicknesses of each layer and placement methods will be determined in the final design and will be based on the proposed end use (i.e., load bearing) and geotechnical characteristics of the native materials.

In accordance with Detail C on Figure 5, landscape areas will include the following elements listed from bottom to top:

- Six inches of clean topsoil (determined by sampling and comparison to MDE clean fill standards);
- 18 inches of clean soil fill (determined by sampling and comparison to MDE clean fill standards);
- Marker fabric; and
- Existing Grade (existing site soil or other suitable fill to raise grade as needed).

Additionally, two feet of clean fill overlying marker fabric will be placed around the root balls of any planted trees and one foot of clean fill will be placed above and below utility lines with the all trenches lined with marker fabric (Detail 3D on Figure 5).

In the event that utilities are installed below grade, a detail figure showing a geomembrane boot used to seal the opening around a typical utility entering a building has been included as Detail E on Figure 5.

Appendix B includes the preliminary technical specifications related to the cover portion of the remedy, including asphalt and earthwork covers. Changes to the preliminary specifications and additional specifications will be identified by the developer during the preparation of the final design.

2.3 *SUBSLAB VENTING SYSTEM*

2.3.1 *Description of Corrective Measure*

A subslab venting (SSV) system was determined to be the most viable technology for mitigation of potential vapor intrusion conditions at the Site. SSV is a passive technology that utilizes convective flow to convey air/soil gas through a permeable subslab layer and upward through a vent. This flow system relies on ambient air temperatures and wind. This is an effective system for sites that require small reductions in constituent concentrations in the soil vapor. SSV consists of a vapor barrier, a permeable gravel conveyance layer, and vents to capture and convey accumulated subslab vapor to the atmosphere. Since SSV is a passive system, no power or mechanical components will be required to mitigate vapor intrusion, thus significantly reducing operations and maintenance activities.

2.3.2 *Design Criteria*

The risk evaluation conducted in accordance with the CMS indicates that vapor intrusion could pose an unacceptable human health risk on the northern six acres of the North Parcel and the adjacent Fleet property, which indicate that mitigation measures are necessary for protection of Site workers. There are no existing buildings on the North Parcel of the portion of the Fleet property overlying the impacted ground water; however, new buildings will be designed with a vapor mitigation system. Mitigation of the potential migration of any volatile vapors through the installation of engineering controls in every building will prevent future potential exposure of the Site workers to the vapors.

Furthermore, USEPA (2016a) stated that if future ground water results from monitoring wells on the 17-acre southern portion of the North Parcel reveal similar or lower concentrations of VOCs over time, a vapor barrier would not be warranted for a future structure on the 17-acre parcel. However, the design elements described in this section will apply to a subslab venting system for buildings on this parcel if future ground water quality data indicate ground water quality conditions on the 17-acre parcel worsen over time.

2.3.3 *Design Basis*

SSV is a passive technology that conveys the upward flow of subsurface vapors through engineered systems, (i.e., layers and pipes), to prevent intrusion into an occupied building. For any future buildings, the SSV system will include a synthetic membrane, permeable gravel layer, horizontal piping, and vents. Specifically, the various components of the SSV system for the proposed buildings are summarized below:

- **Vapor Barrier**. A vapor barrier, consisting of a minimum 30-mil High Density Polyethylene (HDPE) smooth geomembrane, will be placed below the slab. Additionally, the geomembrane will be properly seamed to achieve a contiguous barrier. Chemical compatibility with the HDPE was established by reviewing industry standard manufacturer technical specifications. HDPE is the preferred material for the vapor barriers due to durability and cost, and therefore was checked for compatibility. The technical specifications for an industry standard manufacturer were cross-referenced with the volatile organic compounds detected in the soil vapor samples. This review determined that 30-mil HDPE is compatible with the specific compounds in the soil vapor and in particular chlorobenzene.
- **Gravel**. A permeable gravel layer of No. 57 stone will be placed below the geomembrane to enable lateral conveyance of the soil gas. No. 57 stone is comprised of mid-sized gravel with no fines, which will enable significant voids to form in the layer and trap rising soil gas. The gravel layer will be a total of 8 inches thick. The horizontal collection pipes will be located within the gravel layer.

- **Piping**. Horizontal pipes will be manifolded within the permeable gravel layer to facilitate conveyance of vapor to exhaust vents. The horizontal pipes will be 4-inch diameter HDPE material, spaced a maximum of 40 feet apart and 20 feet from building edges. The bottom half of each pipe will have four rows of perforations to facilitate vapor collection.
- **Geotextile**. An 8-ounce non-woven geotextile will be placed below the permeable gravel layer to prevent the introduction of fines, while still allowing soil gas to rise into the layer. Also, geotextile will be placed below and above the geomembrane in order to protect it from the concrete foundation slab and permeable gravel layer, both of which are puncture hazards.
- **Ventilators**. Depending on the footprint of the building, one or multiple vertical risers will be installed with ventilators to exhaust the gases above the roof and outside of the breathing zone for ground level employees. The vent(s) should be a minimum of 3 feet above the roof and 10 feet from any door, window, or air intake.

Figures 6 through 9 present the design elements for the SSV system for new buildings. A typical plan view of the vapor management system with exhaust vent locations is shown in Figure 8. Technical specifications for granular material (No. 57 stone), geotextile and geomembrane are included in Appendix B. A geotechnical and/or structural engineer will provide the foundation design as part of the final design package. The final system design could vary from the typical design elements presented herein, but will adhere to the design basis.

The SSV system will be installed as the proposed building foundations are constructed. The above components will be integrated with the proposed building foundation and structure as these facilities are constructed concurrently.

Appendix B includes the preliminary technical specifications related to the SSV portion of the remedy, including specifications for granular materials, geomembrane and HDPE piping systems. Changes to the preliminary specifications and additional specifications will be identified by the developer during the preparation of the final design.

3.0 SUPPORT PLANS

3.1 OPERATION AND MAINTENANCE PLAN

The 50 percent design level Operation and Maintenance (O&M) Plan describing related O&M activities is provided in Appendix C. The O&M plan will be completed after the final site redevelopment is determined and designed.

3.1.1 Site Cover O&M

Inspection of the concrete, asphalt and landscape surfaces will include, but not be limited to, visual observations to determine the occurrence of any of the following items:

- Erosion;
- Stressed/inadequate vegetation in landscaped areas;
- Indications of animal, rodent, or insect disturbance;
- Settlement/subsidence;
- Cracks, potholes, or depressions;
- Surface water ponding; and
- Stability/structural failure.

3.1.2 Subslab Venting System O&M

The SSV passive technology requires minimum long-term O&M because the system contains no mechanical equipment. The O&M costs for this system will be generated from the general upkeep of SSV components. Inspections and maintenance will need to be conducted on the system as a whole to ensure its proper functioning over time. The SSV system consists of an HDPE geomembrane vapor barrier, a permeable gravel layer containing horizontal HDPE piping, three separate layers of non-woven geotextile, and vertical vents to safely release the soil gas.

Quality Assurance and Quality Control (QA/QC) testing will be conducted on the system components in accordance with manufacturers' specifications.

The elements associated with a properly functioning SSV system that are subject to inspection include the following:

- Concrete slab;
- Sealant;
- Pipe vents;

- Ventilators;
- Intake inlets; and
- Condensate vaults.

Maintenance will include repairs to any problems observed during the quarterly inspections. Upon the observation of a problem, the situation will be evaluated and the appropriate response or repair will be initiated in a timely manner. The method of repair will be recorded in the inspection form as follow-up documentation.

3.1.3 Other O&M Activities

In addition to inspection of the Site cover and the SSV system, vegetation, monitoring wells and security measures associated with the North Parcel will be monitored to ensure there are no concerns and that the systems are functioning properly. Detailed inspection and security measures will be described in the final version of the O&M plan.

3.3 GROUND WATER MONITORING PLAN

The 90 percent design level Ground Water Monitoring Plan (GWMP) describing related monitoring and sampling procedures is provided in Appendix D. The GWMP is considered to be a final document after USEPA approval and will be implemented once approved.

Ground water monitoring will consist of annual collection of ground water levels and water quality samples for a network of on-site and off-site wells located on the North Parcel, Dana and Fleet properties. To the extent practicable, the ground water monitoring will be conducted concurrently with the annual RCRA ground water monitoring program.

3.4 OFF-SITE USE CONTROL PLAN

The 90 percent design level Off-site Use Control Plan describing proposed institutional controls for the Dana and Fleet is provided in Appendix E. The Off-site Use Control Plan is considered to be a final document after USEPA approval and will be implemented once approved.

The Off-Site Use Control Plan identifies the specific steps required to implement, monitor, and enforce use controls for Dana and Fleet properties, and specifies the schedule for implementation and reporting of the controls. FMC will be the primary party responsible for determining compliance with use controls through periodic interviews with the property owners and inspections of the two

properties. In the event that FMC, Dana, or Fleet transfers ownership of their properties, the use controls will convey to new land owner.

In general, Dana and Fleet will comply with the following use controls until USEPA determines that the use control is no longer necessary for the protection of human health or the environment:

1. Ground water beneath the property shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by USEPA in the FDRTC;
2. Well drilling is prohibited at the property without prior USEPA approval to prevent inadvertent exposure to the contaminated ground water and adverse effects to the Final Remedy selected by USEPA in the FDRTC;
3. The property shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use;
4. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120 and the work shall be conducted under the direction of a Health and Safety Plan (HASP); and
5. A vapor control system, the design of which shall be approved in advance by USEPA, shall be installed in each existing structure and each new structure constructed in the area where ground water contamination is present.

3.5 STORMWATER MANAGEMENT PLAN

The 50 percent design level Stormwater Management Plan is provided in Appendix F. Stormwater management is required throughout all phases of project development. The Stormwater Management Plan provides an overview of the stormwater management required during the redevelopment of the six-acre northern portion of the Site. The Stormwater Management Plan focuses on the steps to take during and after the construction phase to ensure appropriate stormwater management controls are implemented. The Stormwater Management Plan will be completed after the final site redevelopment is determined and designed.

A Erosion and Sediment (E&S) Control Plan will be needed to support construction, and will need to be prepared and submitted to the City in support of the stormwater management approval. Figure 10 provides a preliminary engineering drawing showing potential E&S controls.

3.6 *CONSTRUCTION QUALITY ASSURANCE PLAN*

The 50 percent design level Construction Quality Assurance (CQA) Plan is provided in Appendix G. The CQA documents the actions to be taken by the CQA officer during implementation of the construction elements in the CMI Work Plan. The excavation, transportation, treatment, and placement of the NAPL-impacted soils, and placement and construction of engineered cap will be conducted by an approved FMC contractor. To confirm that the construction quality assurance objectives are met, a separate contractor will oversee the remedial elements of the construction, and will serve as the CQA officer. The CQA Plan will be completed after the final site redevelopment is determined and designed.

4.0 *PROJECT MANAGEMENT PLAN*

4.1 *PROJECT TEAM*

Key roles of the team that will perform the work described herein are:

- **FMC Corporation –** FMC is responsible for the directing the implementation of the CMI Work Plan and associated O&M and other plans.
- **Environmental Construction Contractor –** The environmental construction contractor will be responsible for implementing the CMI Work Plan, the SMP, O&M Plan, and Stormwater Management Plan. The environmental construction contractor will report to the developer.
- **Construction Representative –** The construction representative will be responsible for overseeing the remedial elements of the construction activities (e.g., soil excavation and handling, backfilling, etc.), and implementing the CQA Plan. The construction representative will report to FMC.
- **Environmental Contractor –** The Environmental Contractor will report to FMC and be responsible for implementing the GWMP and Use Control Plan.
- **Off-site Laboratory –** The environmental media (e.g., soil and/or ground water, etc.) will be analyzed by a designated laboratory. The off-site laboratory will report directly to the environmental contractor.

4.2 *IMPLEMENTATION SCHEDULE*

A detailed implementation schedule, including a sequence of construction tasks, cannot be prepared until there is a specific development plan for the northern part of the North Parcel. Once a redevelopment plan is identified, FMC will provide USEPA with a CMI Work Plan implementation schedule.

4.3 *PROJECT PERMITTING PLAN*

Table 1 includes a preliminary list of permits and requirements needed to implement the CMI Work Plan. The final list of permits and requirements will be completed by the developer after a redevelopment plan is identified.

4.4 *HEALTH AND SAFETY*

FMC recognizes the need to ensure that the work is conducted safely and in accordance with the health and safety procedures established for the Site. During the implementation of the intrusive construction work, including the

excavation of the source area, there is the potential for chemical exposures to workers, as well as typical physical hazards associated with intrusive Site work. The health and safety procedures that will be followed during the intrusive construction activities will be included in a project-specific HASP that covers specific activities associated with implementation of the CMI Work Plan. The HASP and any HASP Supplement(s) will conform to OSHA and USEPA requirements including, but not limited to, 29 CFR 1910.120. Workers conducing intrusive activities on the norther portion of the North Parcel need to comply with OSHA and USEPA requirements including, but not limited to, 29 CFR 1910.120.

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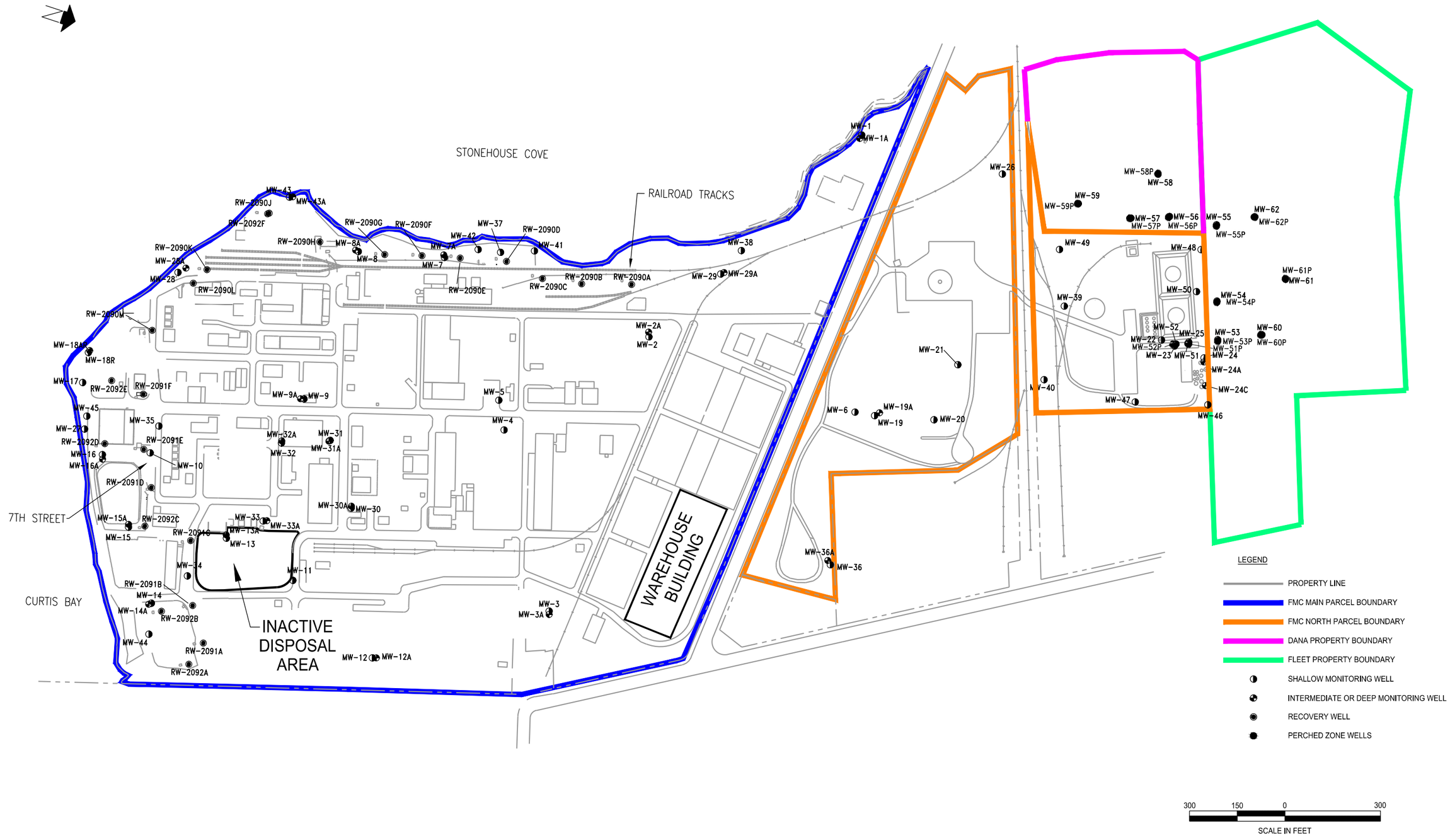
United States Environmental Protection Agency (USEPA). 2016a. Letter accepting the findings in the May 2016 Soil Gas Investigation Report, dated 30 August 2016.

FIGURES

FIGURE 1
SITE PLAN
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

N:\Projects\Spencer's Projects\Drawings-2013\FMC Baltimore\0176466\Figure 1 Site Plan.dwg

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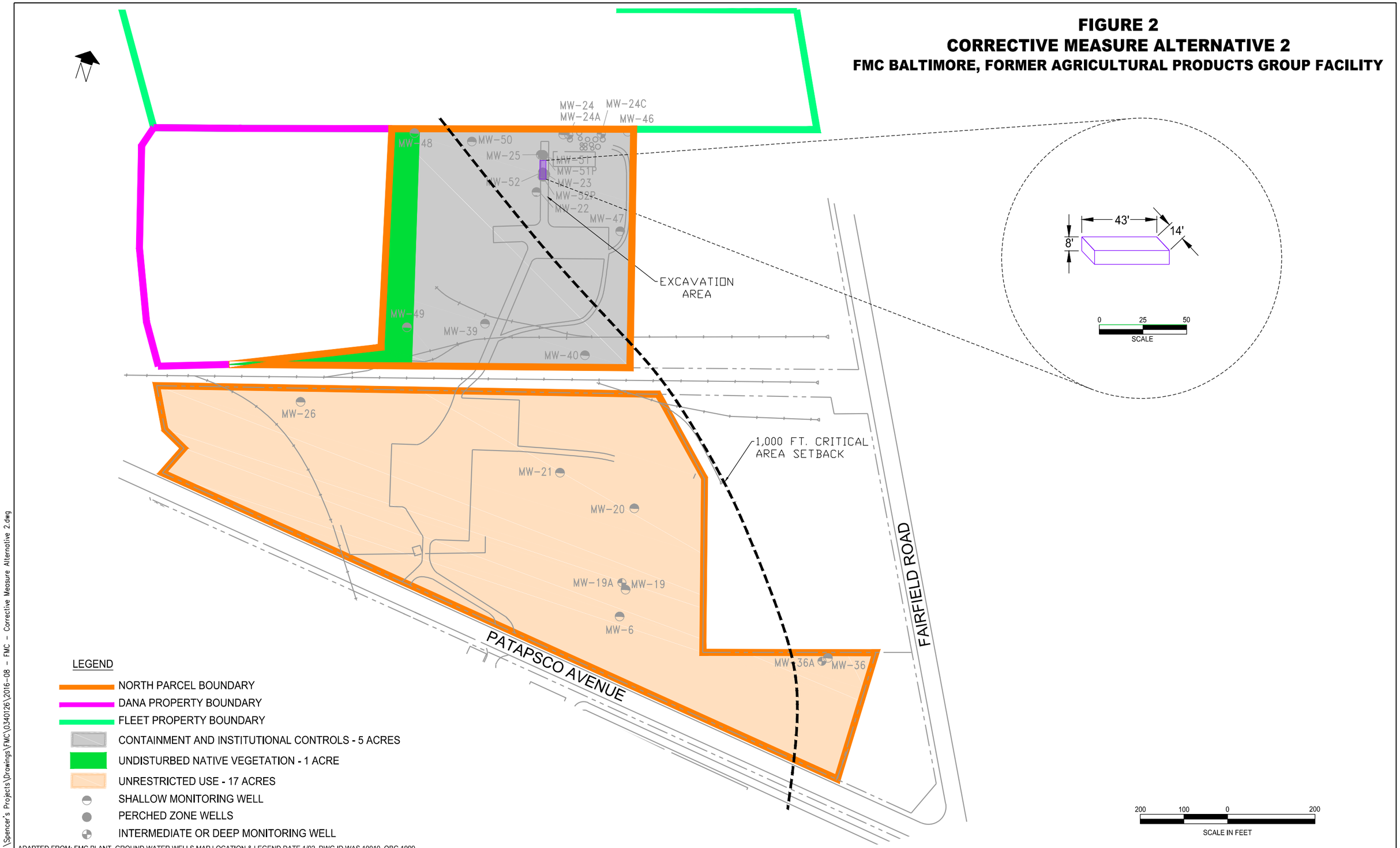
ERM, INC.

FIGURE 2
CORRECTIVE MEASURE ALTERNATIVE 2
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

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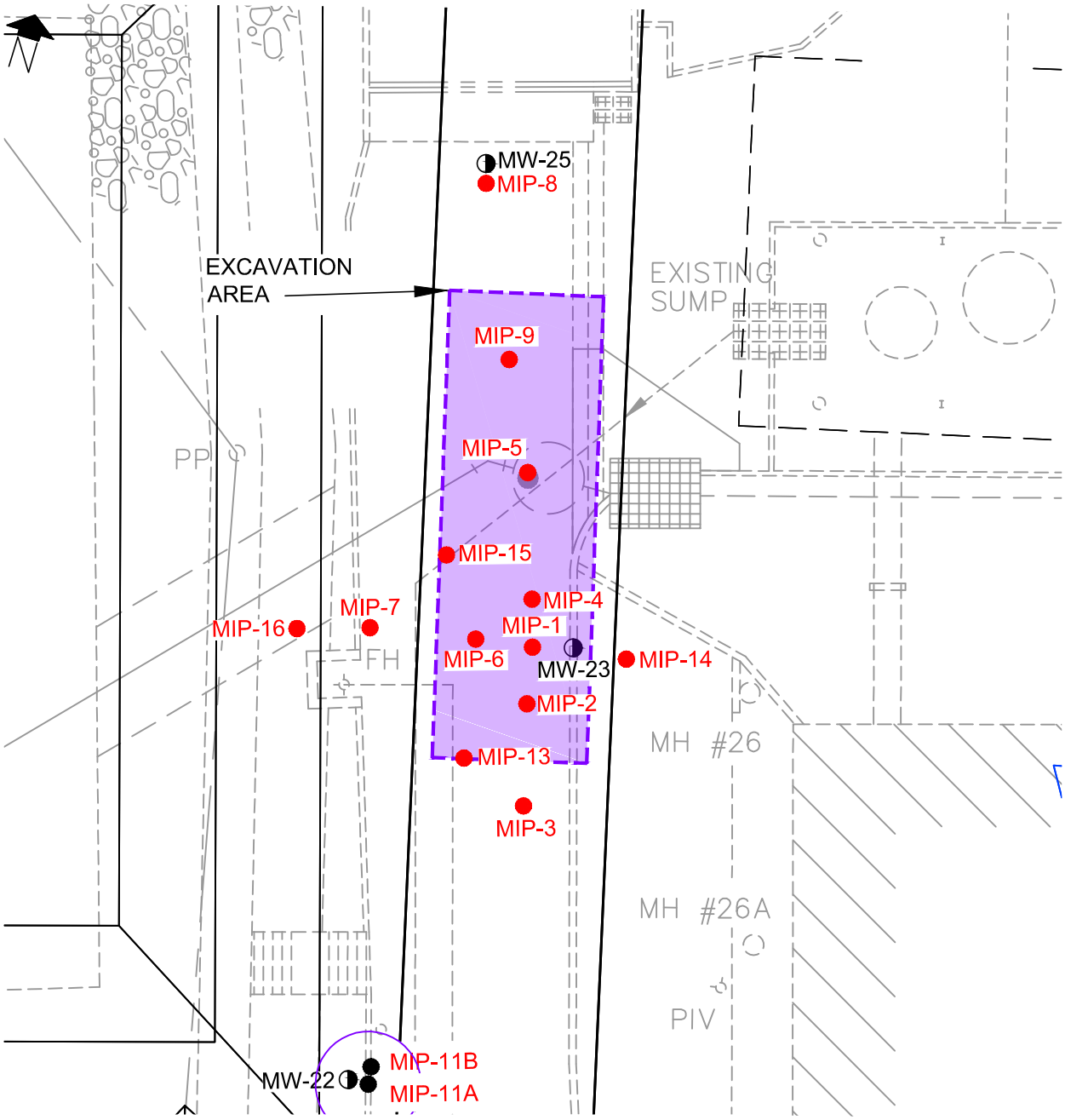
FIGURE 3
MEMBRANE INTERFACE PROBE LOCATIONS AND EXCAVATION AREA
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ABBREVIATIONS & LEGEND

- MEMBRANE INTERFACE PROBE LOCATIONS
- MONITORING WELL
- FH — FIRE HYDRANT
- PIV — POST INDICATOR VALVE
- PP — POWER POLE
- MH — MANHOLE
- SIV — SEWER INDICATOR VALVE
- CB — CATCH BASIN
- 8' CHAIN LINK FENCE
- EXISTING STONE BERM(U.N.O)

15 7.5 0 15
SCALE IN FEET

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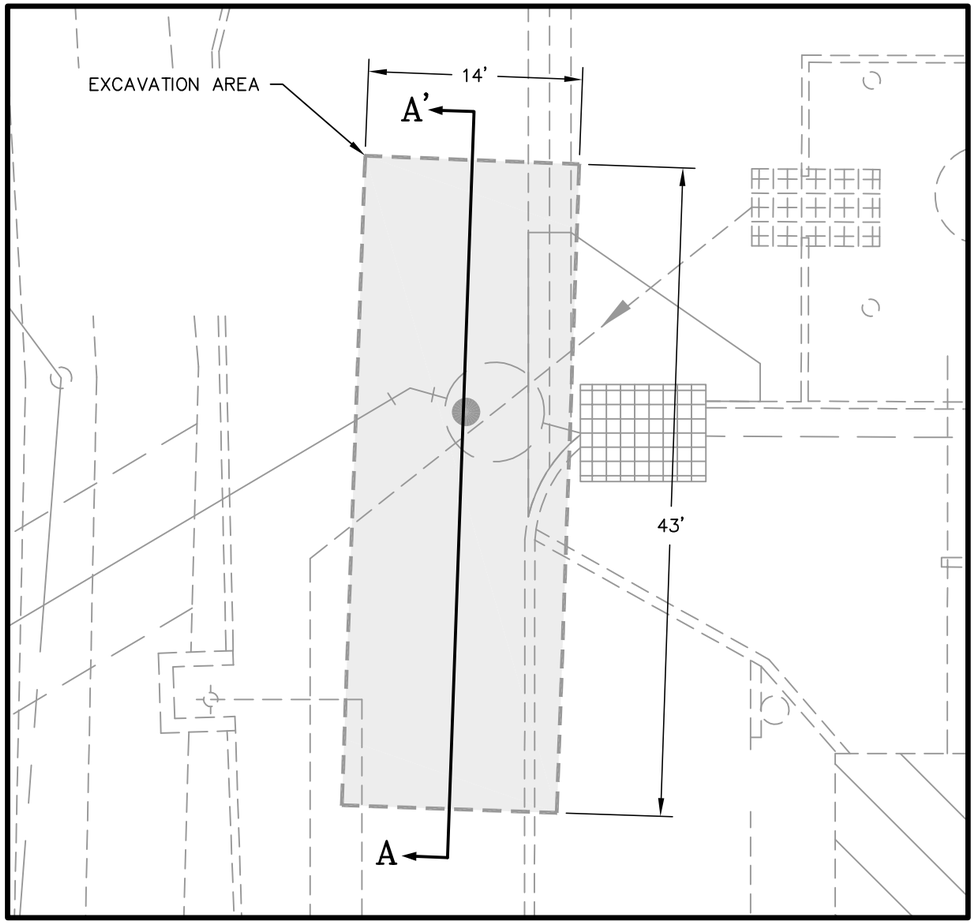
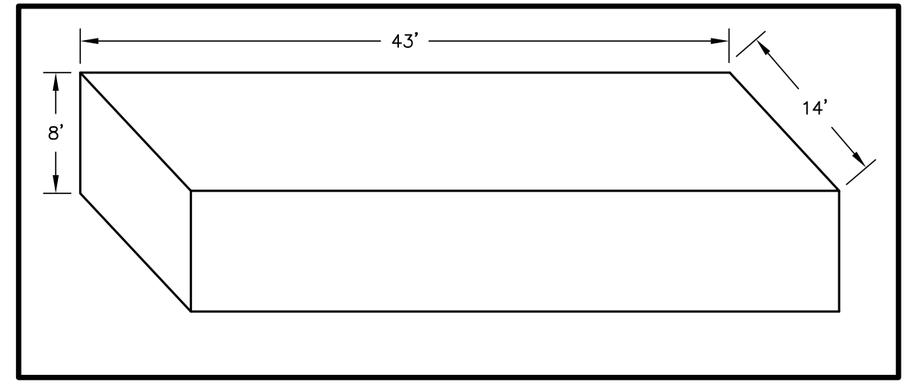
EXCAVATION AREA



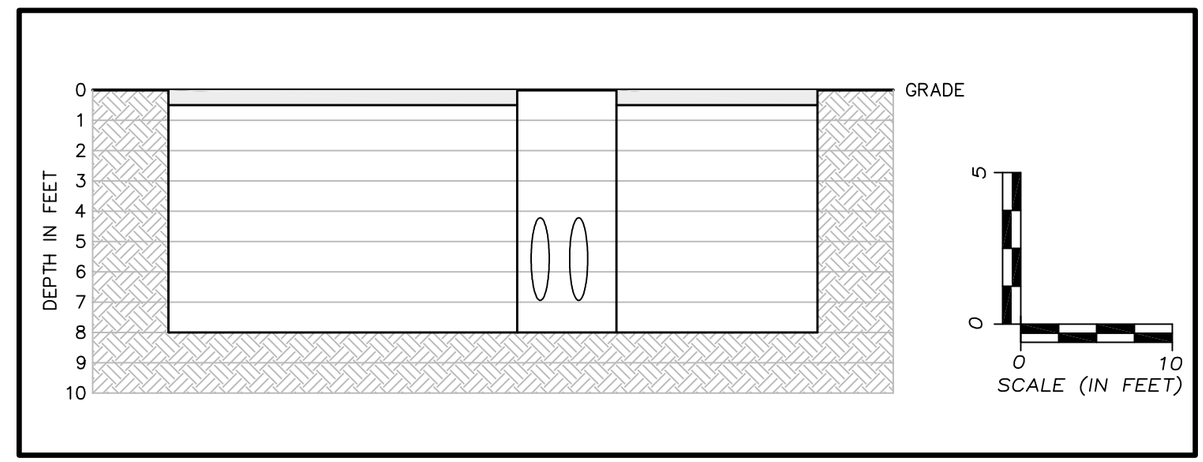
EXCAVATION PLAN VIEW

SCALE: 1"=10'



EXCAVATION ISOMETRIC VIEW

SCALE: 1"=40'



EXCAVATION CROSS SECTION A–A'

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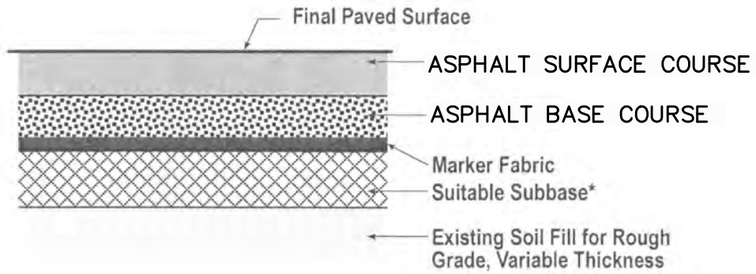
TYPICAL SITE COVER CROSS SECTIONS AND UTILITY DETAILS

A. Asphalt Pavement

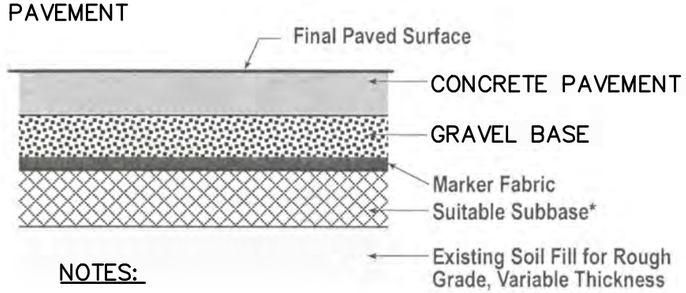


NOTES:

1. MARKER FABRIC SHALL BE PLACED BELOW THE AGGREGATE SUBBASE AS SPECIFIED HEREIN.

2. FINAL THICKNESSES TO BE DETERMINED UPON FINAL DESIGN, INCLUDING EVALUATION OF GEOTECHNICAL DATA AND TRAFFIC FLOW.

B. CONCRETE PAVEMENT

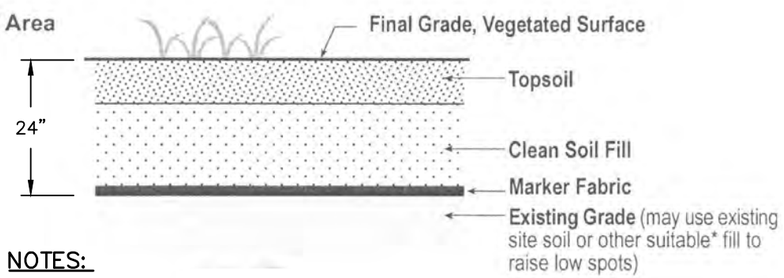


NOTES:

1. MARKER FABRIC SHALL BE PLACED BELOW THE AGGREGATE SUBBASE AS SPECIFIED HEREIN.

2. FINAL THICKNESSES TO BE DETERMINED UPON FINAL DESIGN, INCLUDING EVALUATION OF GEOTECHNICAL DATA AND TRAFFIC FLOW.

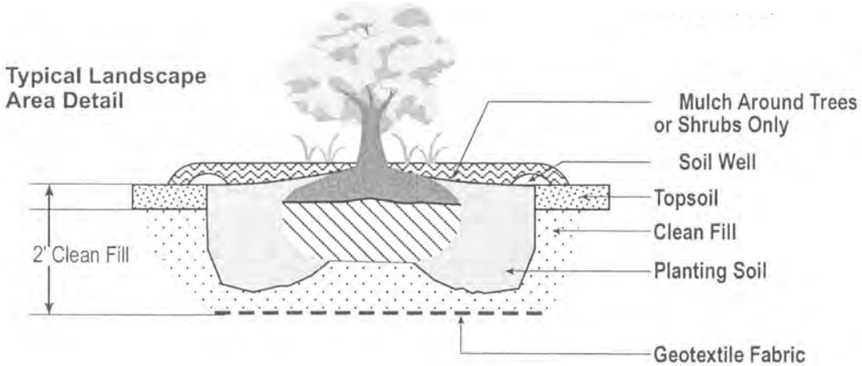
C. Landscaped Area



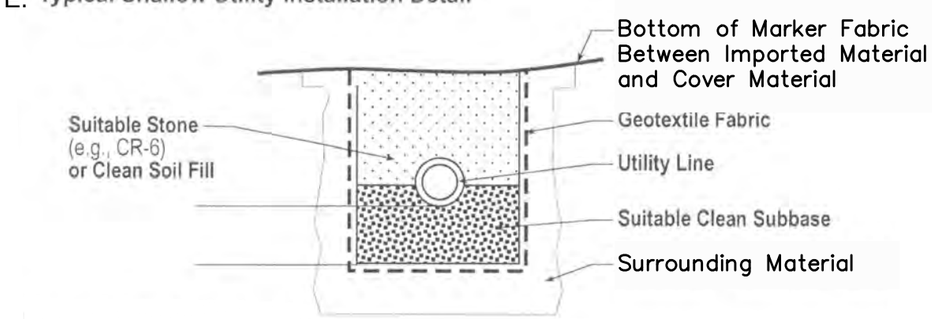
NOTES:

1. MARKER FABRIC SHALL BE PLACED BELOW 2 FEET OF SOIL COVER AND ABOVE EXISTING GRADE AS SPECIFIED HEREIN.

D. Typical Landscape Area Detail



E. Typical Shallow Utility Installation Detail



Note: Not to scale. Not for construction.

* Suitable fill/sub base below the geotextile marker fabric may include recycled demolition debris generated by on-site demolition activities.

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Date Drawn/Rev'd 8/25/16		Environmental Resources Management	FIGURE 5

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TYPICAL VAPOR MANAGEMENT DETAIL

NOTES:

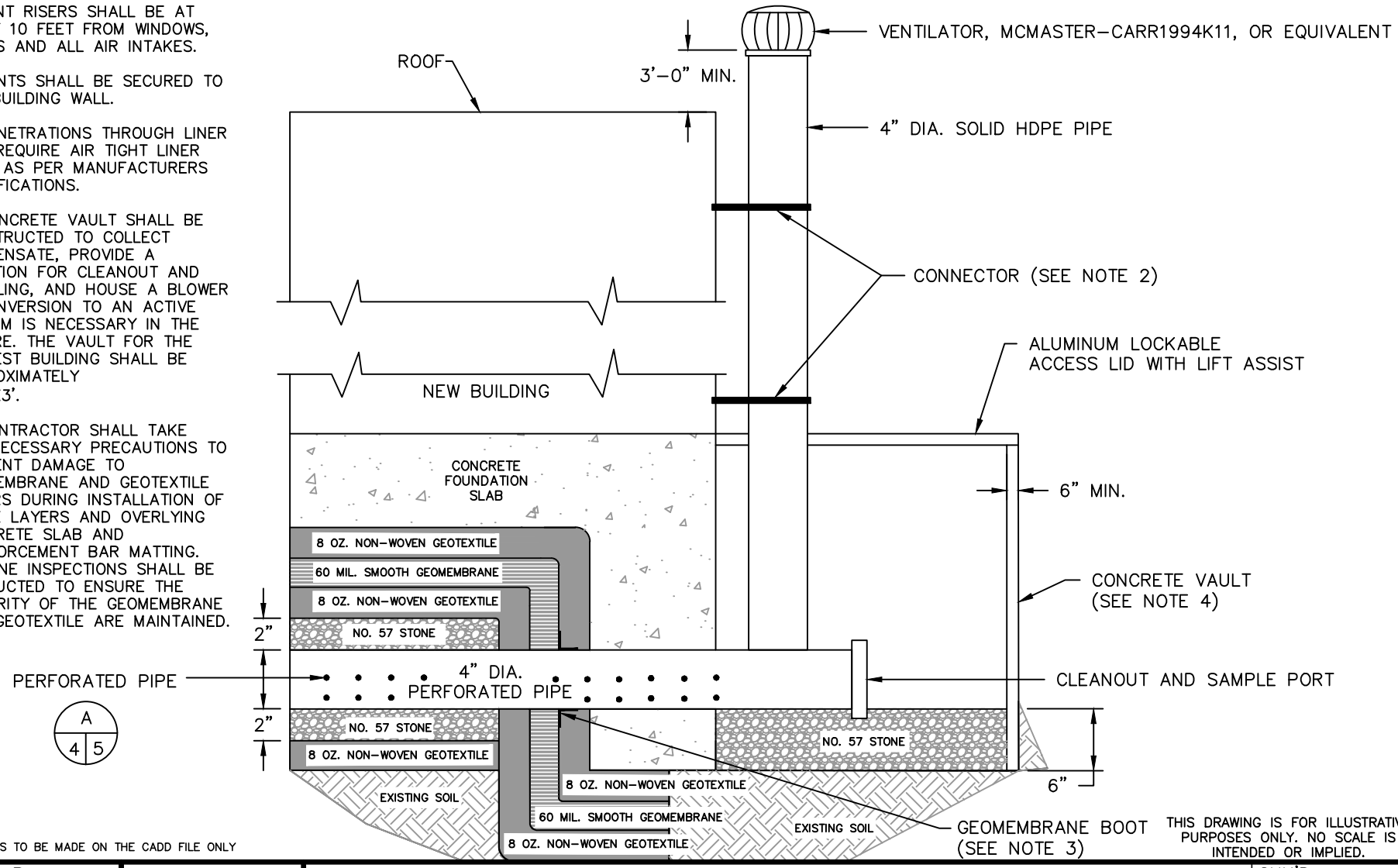
1. VENT RISERS SHALL BE AT LEAST 10 FEET FROM WINDOWS, DOORS AND ALL AIR INTAKES.

2. VENTS SHALL BE SECURED TO THE BUILDING WALL.

3. PENETRATIONS THROUGH LINER WILL REQUIRE AIR TIGHT LINER BOOT AS PER MANUFACTURERS SPECIFICATIONS.

4. CONCRETE VAULT SHALL BE CONSTRUCTED TO COLLECT CONDENSATE, PROVIDE A LOCATION FOR CLEANOUT AND SAMPLING, AND HOUSE A BLOWER IF CONVERSION TO AN ACTIVE SYSTEM IS NECESSARY IN THE FUTURE. THE VAULT FOR THE LARGEST BUILDING SHALL BE APPROXIMATELY 4'X4'X3'.

5. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO GEOMEMBRANE AND GEOTEXTILE LAYERS DURING INSTALLATION OF THESE LAYERS AND OVERLYING CONCRETE SLAB AND REINFORCEMENT BAR MATTING. ROUTINE INSPECTIONS SHALL BE CONDUCTED TO ENSURE THE INTEGRITY OF THE GEOMEMBRANE AND GEOTEXTILE ARE MAINTAINED.



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CADD Review FGB			0340126
Date Drawn/Rev'd 8/25/16		Environmental Resources Management	FIGURE 6

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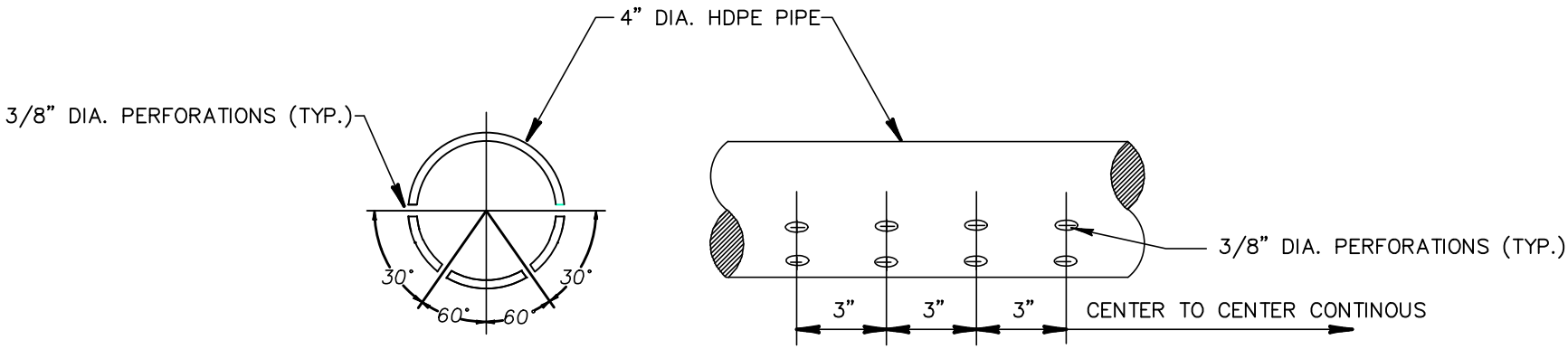
TYPICAL GAS COLLECTION PIPE PERFORATION DETAIL



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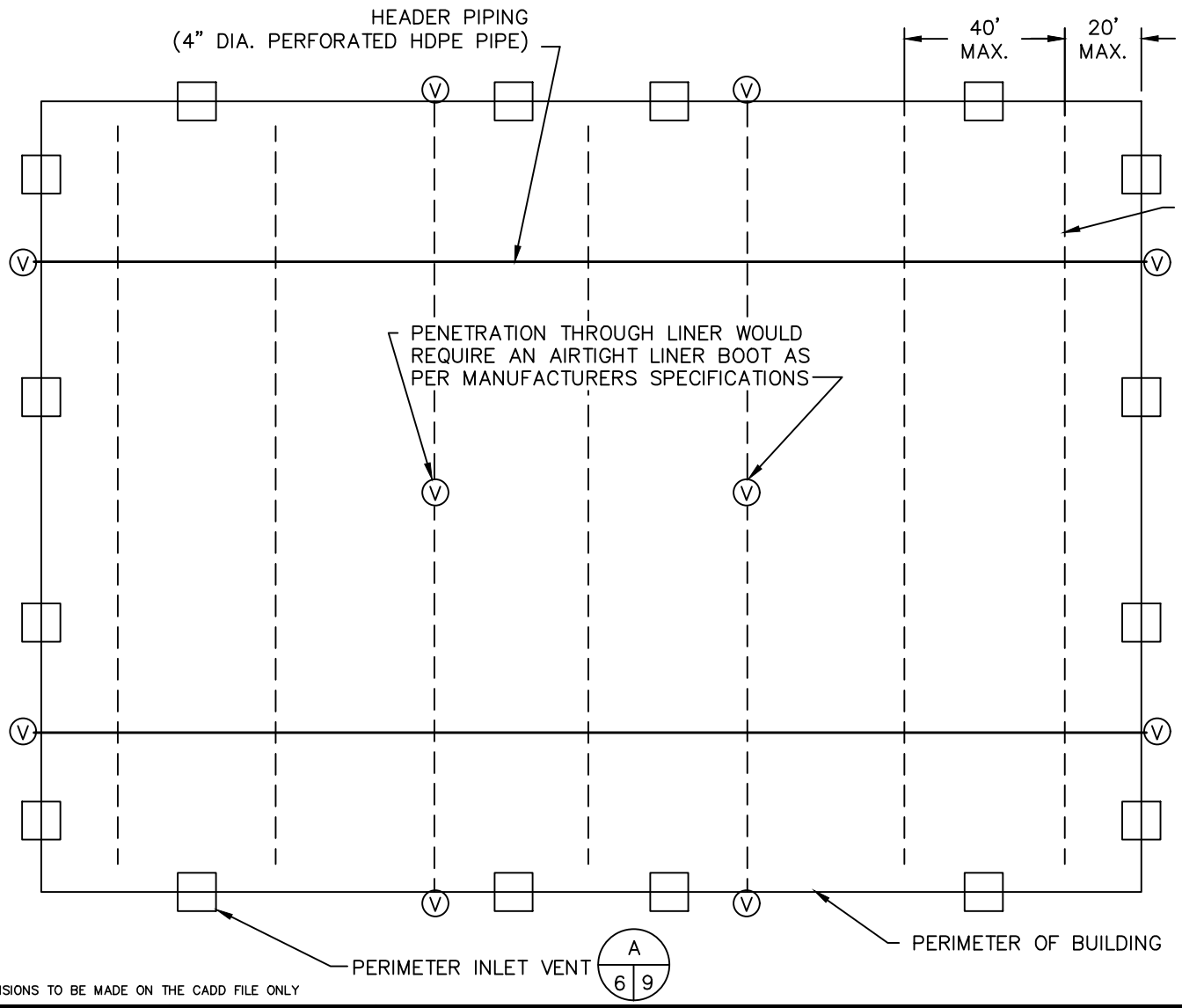
TYPICAL VAPOR MANAGEMENT SYSTEM PLAN



LEGEND

PERIMETER INLET VENT

(V) VENT

NOTES:

1. 20'–0" MAXIMUM SPACING BETWEEN EDGE OF BUILDING AND LATERAL PIPES.

2. 40'–0" MAXIMUM SPACING BETWEEN ADJACENT LATERAL PIPES.

3. VENTS SHALL BE LOCATED SUCH THAT ALL SLAB SURFACES ARE WITHIN 100 FEET OF A VENT. INTERIOR VENTS SHALL ONLY BE PLACED AS NEEDED TO ACCOMODATE THIS REQUIREMENT. OTHERWISE, PERIMETER VENTS SHALL BE UTILIZED.

4. VENT RISERS SHALL BE AT LEAST 10 FEET FROM WINDOWS, DOORS AND ALL AIR INTAKES.

5. TO THE EXTENT PRACTICAL, INLET VENTS SHALL BE EVERY 50 FEET.

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Date Drawn/Rev'd 8/25/16		Environmental Resources Management	FIGURE 8

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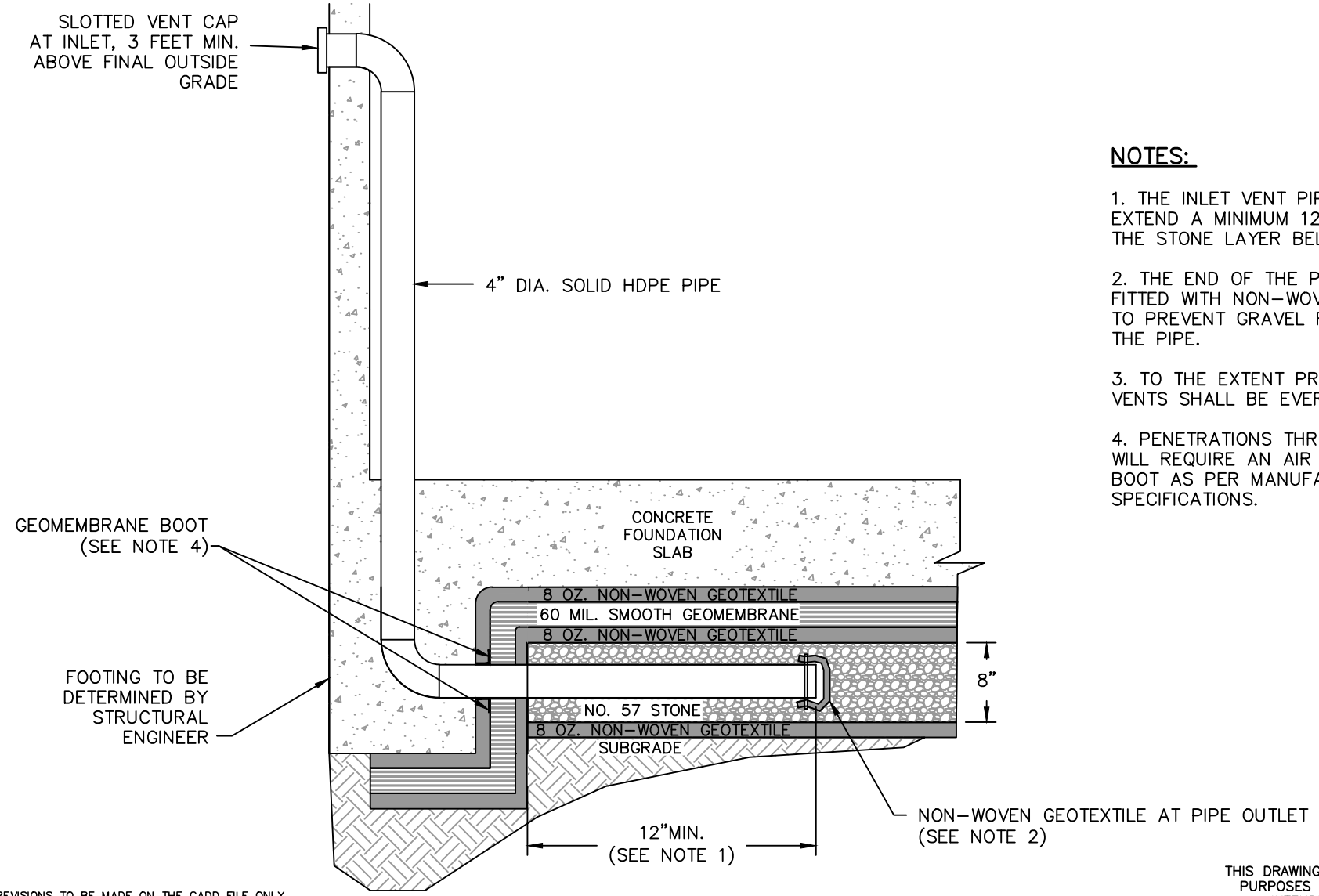
TYPICAL PERIMETER INLET VENT DETAIL



NOTES:

1. THE INLET VENT PIPE SHALL EXTEND A MINIMUM 12 INCHES INTO THE STONE LAYER BELOW THE SLAB.

2. THE END OF THE PIPE SHALL BE FITTED WITH NON-WOVEN GEOTEXTILE TO PREVENT GRAVEL FROM ENTERING THE PIPE.

3. TO THE EXTENT PRACTICAL, INLET VENTS SHALL BE EVERY 50 FEET.

4. PENETRATIONS THROUGH LINER WILL REQUIRE AN AIR TIGHT LINER BOOT AS PER MANUFACTURERS SPECIFICATIONS.

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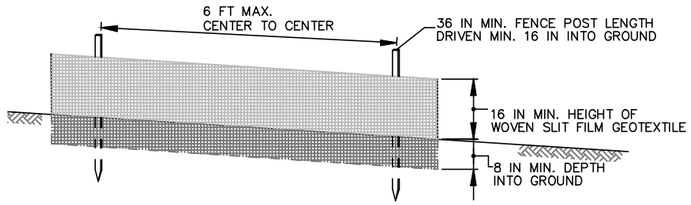
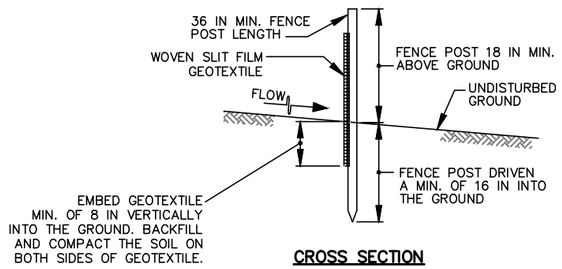
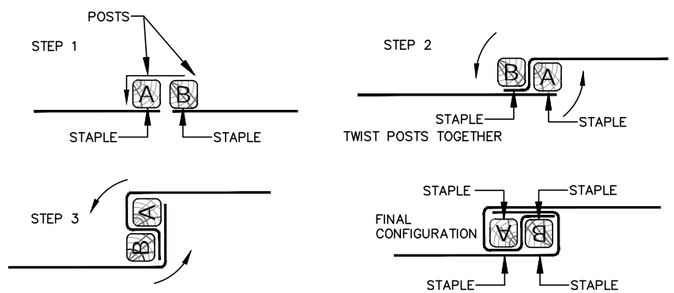
EROSION AND SEDIMENT CONTROLS



ELEVATION



CROSS SECTION

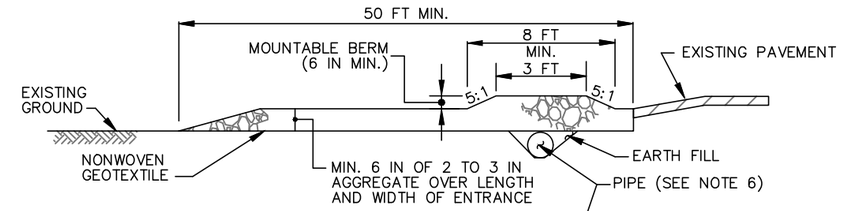


JOINING TWO ADJACENT SILT
FENCE SECTIONS (TOP VIEW)

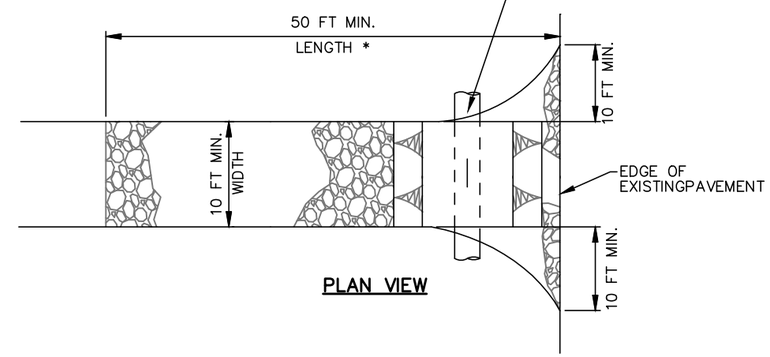
CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

SILT FENCE DETAIL



PROFILE



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

Note: Not to scale. Not for construction.

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TABLE

Table 1
Preliminary List of Regulatory Requirements and Permits
FMC Baltimore, Former Agricultural Products Group Facility

Regulation	Citation	Requirements	Approval Process	Estimated Timeframe
State Critical Area	The Chesapeake Bay Critical Area Act (Section 8-1801 et. Seq., Natural Resources article, Annotated Code of Maryland) and enabling regulations (COMAR Title 27) establishes the State of Maryland Chesapeake Bay Critical Area Commission and requires that Baltimore City prepare and adopt a Critical Area Management Program (CAMP). All land within 1,000 feet of the shoreline fall within the Critical Area (CA) and must be regulated to meet the program goals and requirements.	**Trigger** -10,000 sq ft in CA is disturbed. 19.6 acres of the 23 acre North Parcel is within the 1,000 ft. CA setback. **1,000 foot Critical Area** - (1) 15% of the area within the CA but excluding the CA Buffer must be planted to establish a tree canopy (100 2.5 inch dia trees per acre); (2) Pollution run-off, as measured by phosphorus, must be reduced by 10 percent (per stormwater management plan prepared by engineer). Placement of soil in Buffer will likely allow 10% reduction to be achieved.	Two stage approval: 1) Submit application, including site plan, existing conditions plan, Stormwater Reduction Plan, and Afforestation Plan to Baltimore City Planning; and 2) After resolution of City reviewer comments related to application completeness, the City Planning Department will submit package to the MD DNR CA Commission for review and approval. CA Commission office will review plan and approve or send revision comments within 30 days.	Six to Nine Months
City Department of Planning Site Plan Approval	Pursuant to Article VII of the Baltimore City Charter, the Planning Commission is required to review and deny, approve or amend proposed development plans.	Site Plan Review is the systematic assessment of land development proposals for consistency with land development policies, regulations, and accepted land design best practices. Any new site changes must be reviewed by the Site Plan Review Committee and receive approval recommendations. Approval is a prerequisite for obtaining a building and grading permit.	Review by the city's Site Plan Review Committee (SPRC) is required for construction; committee provides the developer with an informal meeting with the key reviewing agencies. The city's CA reviewer sits on the committee, as well as the City Dept. of Public Works stormwater reviewer. A date to meet with the committee will be provided one to three weeks after submittal of the required materials. A checklist for the SPRC is provided in Appendix A, beginning on page 31, of the City's site plan guidance manual.	Six to Nine Months (concurrent with CA review)
Stormwater Requirements - Post Construction (City)	Article 7 § 21-1 and Article 7 § 23-7 of the Baltimore City Code	Controls to manage stormwater runoff will be required following redevelopment. Stormwater management must be applied according to new development standards for any net increase in impervious area in accordance with Article 7 § 23-7(f) of the City Code. As such, the installation of the asphalt cover at FMC Baltimore is considered quasi new/redevelopment since the existing imperviousness is greater than 40% and the amount of impervious area will increase as a result of a project. For quasi new/redevelopment, stormwater management is required for 50% of the existing impervious area and 100% of the total increase in impervious areas. Both bioretention filters and sand filters were identified as potential stormwater management options for the redevelopment of the North Parcel. These controls are potential options since any excess stormwater not filtered by the control can be discharged via an underdrain rather than recharging the potentially impacted ground water at the site. Filters require some excavation which will trigger Soil Management Plan requirements.	The City has a three step process for reviewing and approving stormwater management plans. Submittals need to be provided at the 30%, 60% and 90% design completion steps for review and approval. The submittals also need to include E&S controls.	Nine to Twelve Months (concurrent with CA review)
Stormwater Requirements - Post Construction (State)	Following construction, the developer may be required to obtain a stormwater permit from MDE under the 12-SW requirements depending upon the intended use of the land and associated SIC Code, and whether pollutants are stored on-site. For example, if the facility is operated under SIC Code 4226 (warehousing and storage), the facility will be required to obtain authorization under the General Permit for Stormwater Discharges Associated with Industrial Activity. Alternatively, the facility could certify that there is no exposure to industrial activities and obtain a No Exposure Certification.	The BMPs approved and installed under the City requirements will meet the substantive requirements under 12-SW. There are some additional requirements depending on the SIC code such as requirements for periodic inspections and in some cases effluent sampling to benchmark water quality.	Submit a completed Notice of Intent (NOI), updated Stormwater Pollution Prevention Plan (SWPPP) and fee.	Nine to Twelve Months (concurrent with CA review)
Stormwater Requirements - During Construction	The permit is necessary to protect water quality and to meet federal and State requirements under Code of Federal Regulations 40 CFR 122.26 and 40 CFR 450, as well as Code of Maryland Regulations COMAR 26.08.04.09A.	Because the installation of the asphalt cover will disturb more than one acre of land, FMC will be required to obtain coverage under the General Permit for Stormwater Associated with Construction Activity.	Submit a Notice of Intent (NOI) using the electronic system. Prior to submitting the NOI, submit E&S plan to City (does not need to be approved). MDE issues 14-day public notice. MDE issues coverage under the general permit unless a citizen requests that an individual permit be issued. Applicant must provide documentation that E&S plan was approved before coverage under general permit is granted.	Three to Six Months (concurrent with CA review)
Building Permit from the Baltimore City Planning Department		A permit will be needed due to grading more 20,000 square feet, with demonstration of compliance with reforestation requirements through CA compliance.	Following SPRC approval, applications for grading and building permits can be submitted.	Three months (after SPRC approval)
Air Emissions	No permit required but required under COMAR 26.11.06 to manage particulate matter, odor and nuisance emissions.	Mitigation of particulate matter is required by regulation such that "a person may not cause or permit any material to be handled, transported, or stored, or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne."	Not Applicable	Not Applicable

FMC Corporation

Appendix A

Sampling and Analysis Plan for the Field Verification Study

Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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1 NAPL FIELD SCREENING METHOD EVALUATION

LIST OF ACRONYMS

APG	Agricultural Products Group
A-Zone	A-Zone Environmental Services
bgs	below ground surface
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DNAPL	Dense Non-aqueous Phase Liquid
DQO(s)	Data Quality Objective(s)
ERM	Environmental Resources Management, Inc.
FMC	FMC Corporation
HASP	Health and Safety Plan
MIP	Membrane Interface Probe
NAPL	Non-aqueous Phase Liquid
PID	Photoionization Detector
PSSI	Phase Separation Sciences, Inc.
SAP	Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency
UV	Ultraviolet Fluorescence
VOC(s)	Volatile Organic Compound(s)

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management, Inc. (ERM) has prepared this Sampling and Analysis Plan (SAP) for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC Former Agricultural Products Group (APG) facility at 1600 East Patapsco Avenue, North Parcel (Site) (Figure 1). The data collected through the implementation of this SAP will be used during the implementation of the Corrective Measures Implementation (CMI) Work Plan for the North Parcel. The SAP presents the scope for the implementation of a field study including the installation of soil borings and collection, field screening, and laboratory analysis of soil samples. The SAP is considered to be a 90 percent sign submittal and once approved by USEPA will be finalized and implemented.

1.1 BACKGROUND

During implementation of the site-wide ground water sampling event in 2008, emulsified non-aqueous phase liquid (NAPL) was identified during the purging and sampling of well MW-23. Over a foot of dense non-aqueous phase liquid (DNAPL) was present, and laboratory analysis confirmed the primary constituent to be chlorobenzene. A membrane interface probe (MIP) survey was conducted in October 2009 to determine the vertical and horizontal extent of volatile organic compounds (VOCs) in soil and ground water. The MIP was submerged in a sample of the DNAPL collected from well MW-23 and the MIP photoionization detector (PID) response was 1.4×10^{-7}. Measurements at or above this reading were interpreted to indicate the presence of DNAPL. Points were advance in intervals working outward from well MW-23 in four directions until the MIP readings indicated that NAPL or heavily impacted soil or ground water was no longer present (Figure 2). The investigation identified areas of potential DNAPL in the vicinity of a manhole associated with the fire water deluge collection system, piping associated with the manhole, and piping associated with a fire hydrant. Heavily impacted intervals were identified between 8 and 19 feet below ground surface (bgs).

Based on the results of the MIP survey, 12 temporary piezometers were installed to verify the presence or absence of NAPL and soil shake tests with hydrophobic due were used to determine the presence or absence of NAPL. Positive shake tests for DNAPL were recorded at 7 of the 12 piezometers. However, measureable NAPL has not been identified in any of the piezometers to date, indicating the absence of any significant volume of extractable DNAPL beyond well MW-23.

In 2011, two recovery wells were installed adjacent to well MW-23. One well was screened in the perched water zone and one in the shallow aquifer. Five bail-down

events were conducted between December 2011 and April 2012. NAPL was not encountered in either well throughout the bail-down testing, confirming the highly localized nature of the DNAPL previously observed in well MW-23. The only instance of measurable DNAPL was 0.11 feet at well MW-23 prior to the March 2012 extraction event. The results of the tests confirmed that the amount of recoverable DNAPL at the Site is minimal. Cumulatively, the investigations indicate that the chlorobenzene source area consists of vadose zone and perched zone soils above the gray clay in the vicinity of well MW-23.

The Corrective Measures Study (CMS) for the North Parcel (ERM, 2016) recommended the removal and disposal of the source area, consisting of removal of NAPL-impacted soils (Figure 2). Specifically, the CMS recommended the removal and disposal of 200 cubic yards (10 feet by 60 feet by 8 feet) of NAPL-impacted soils within the vicinity of monitoring well MW-23. This area was identified as the source area for the chlorobenzene impacts to the perched and shallow ground water beneath the northern six acres of the North Parcel and adjacent off-site properties. The soils will be removed down to the gray clay confining layer that separates the perched ground water flow zone from the underlying ground water flow zone. On site, the gray clay is encountered at depths ranging from approximately 6 to 13 feet bgs and averages approximately 5 feet in thickness.

1.2 PURPOSE

This SAP describes the scope of the field investigation and laboratory analysis to develop an approach to relate the absence or presence of NAPL to in-field and confirmatory laboratory measurement techniques. The objective of the field verification study is to identify a screening mechanism for implementation during source removal to determine the absence or presence of NAPL. The screening mechanism will allow real time data collection to determine the lateral limits of the proposed source area excavation, and require no laboratory confirmation samples to be collected during the excavation.

1.3 PLAN ORGANIZATION

The remainder of this SAP is organized as follows:

- Section 2 – Scope of Work. This section describes the scope of work necessary to complete the implementation of the SAP. The section also addresses quality assurance and reporting; and
- Section 3 – Project Management. This section identifies the project team, anticipated schedule, and health and safety procedures for the implementation of the SAP.

2.0 SCOPE OF WORK

2.1 SUBSURFACE CLEARANCE

FMC will provide all available utility maps and construction drawings and will assist in identifying any subsurface utilities that could potentially interfere with sampling to the extent possible. The final sample locations may be adjusted based on the presence of subsurface utilities. Maryland Miss Utility service will be contacted prior to mobilization on the property, and a private utility mark-out will be performed prior to installation of the soil borings.

2.2 BORING INSTALLATION AND SCREENING

Sampling Locations

ERM will install five soil borings to the top of the gray clay layer via direct push technology utilizing a Maryland-licensed Geoprobe® drilling firm. Two of the borings will be located adjacent to monitoring well MW-23 to target the area where DNAPL has been previously identified. The remaining three borings will be installed at a distance of 10 feet to the north, south, and west of monitoring well MW-23 where the MIP survey indicated the presence of NAPL. The final locations selected for boring installation may be adjusted based on potential above and/or below grade obstructions.

Sampling Procedures

Continuous soil cores will be collected and screened in one-foot intervals with a PID. The PID readings along with visual characteristics of the soil cores will be recorded in a field notebook. Two depth intervals from each boring will be selected for further investigation utilizing field screening techniques and laboratory analysis. One depth interval will be selected in the field based on the PID readings and visual observations. The second depth interval will consist of the one foot interval above the gray clay layer. Table 1 summarizes the field screening techniques evaluated for testing. The techniques retained for use in the field verification study consist of the following:

- **Head Space Screening –** A representative portion of soil will be placed in a laboratory supplied, clean glass jar and sealed with aluminum foil and the jar lid. The sample will be allowed to equilibrate for a minimum of ten minutes. The sample jar will then be shaken and the head spaces will be screened through the aluminum foil with a PID for total VOCs.
- **Hydrophobic Dye –** OilScreenSoil (Sudan IV)® hydrocarbon soil test kits will be used for each soil sample. The procedure consists of adding approximately 1 milligram of soil to the test bottle which contains soluble dye cube, adding potable water, and shaking the sample. The dye will stain petroleum

products red while a green dye will color the added potable water. ERM notes that hydrophobic dyes may be ineffective on soils that contain a high percentage of clays.

- **UV Fluorescence –** The soils will be screened for ultraviolet fluorescence (UV) by passing a portable UV light over each soil sample in a dark room. Although many NAPLs fluoresce, ERM notes that this screening technique is typically most effective on petroleum compounds.
- **Laboratory Analysis –** A soil sample will be submitted for quantitative laboratory analysis of chlorobenzene via USEPA Method 8260.

2.3 *SAMPLE ANALYSIS*

Phase Separation Science, Inc. (PSSI) of Baltimore, Maryland will conduct the analysis of the samples. The soil samples will be analyzed for chlorobenzene via USEPA Method 8260. Terracore Kits™ or similar sample tools will be used to collect the samples in accordance with USEPA Sampling Method 5035A.

2.4 *FIELD DECONTAMINATION*

Non-dedicated sampling equipment will be cleaned after each use with a non-phosphate detergent/tap water solution, rinsing with tap water, followed by a distilled or deionized water rinse. The non-dedicated sampling equipment will be decontaminated in the field prior to sampling activities, between sample locations, and prior to leaving the site.

To prevent cross-contamination, dedicated sampling equipment (i.e. Terracore Kits™) will be used to collect the soil samples.

2.5 *MANAGEMENT OF INVESTIGATION-DERIVED WASTE*

Soil cuttings generated during implementation of the SAP will be placed on plastic sheeting and covered. The soil cuttings will be containerized and sampled to determine adherence with the standards included in the July 2010 Soil Management Plan (SMP). The soil will be managed in accordance with the SMP requirements. Offsite disposal, if necessary will be addressed during implementation of the source area removal.

Water generated from decontamination of down-hole equipment and non-dedicated sampling equipment will be contained and disposed of at the on-site wastewater treatment plant. In addition, disposable materials (i.e. nitrile gloves) will be containerized and disposed of in the facility dumpster.

2.6 *DATA QUALITY OBJECTIVES*

The overall Data Quality Objective (DQO) for the soil sampling is to provide data of sufficient quality to compare to the results of the field screening methods described herein. To meet this DQO, definitive quantitation of the concentrations of constituents in soil by the analytical laboratory is needed for 100 percent of the samples. If definitive quantitation for less than 100 percent of the samples is obtained, then additional samples will be collected and submitted for analysis to replace some or all of the samples that were compromised or consumed without usable data being generated.

2.7 *DATA ANALYSIS AND REPORTING*

The data collected during implementation of the field verification study will be included in a brief report. The report will identify the screening mechanism selected to be implemented during source removal. The report will include the field data sheets, laboratory reports, field notes, photographs, and other relevant information from the field effort necessary to support the selection of the chosen field screening mechanism(s).

3.0 *PROJECT MANAGEMENT*

3.1 *PROJECT TEAM*

Key roles of the team that will perform the work described herein are:

- The **FMC Project Manager** is Mr. Douglas Groux. FMC is directly responsible for the implementation of the SAP;
- The **Environmental Contractor** is ERM. ERM will be responsible for completing the work in accordance with this SAP;
- The **Laboratory Contractor** will be Phase Separation Sciences, Inc. (PSSI) of Baltimore, Maryland. The off-site laboratory will report directly to the environmental contractor; and
- The **Drilling Contractor** responsible for installation of soil locations will be A-Zone Environmental Services, Inc. (A-Zone) of Charles Town, West Virginia.

3.2 *HEALTH AND SAFETY*

The health and safety procedures that will be followed during the field investigation will be included in a project-specific health and safety plan (HASP). Field work will be conducted in accordance with the HASP in a manner to

minimize the probability of a near miss, equipment and property damage, and personal injury. Prior to initiating site work, each field team member will review the HASP and sign the HASP Certification. Field activities will be implemented in modified USEPA Level D protection with FMC's site-specific requirements (i.e., hard hat, safety glasses, steel-toed boots, gloves, long sleeves, high visibility vest or clothing).

3.3 SCHEDULE

The following schedule milestones are anticipated following USEPA approval of this SAP:

- *Soil Sampling*. The soil samples will be collected within two weeks contingent on subcontractor availability; and
- *Data Analysis and Reporting*. The results of the field verification study will be submitted to USEPA in a stand-alone report.

Environmental Resources Management (ERM). 2016. Corrective Measures Study Report for the North Parcel. Former Agricultural Products Group Facility, Baltimore, Maryland, dated 21 January 2016.

Griffin, T.W., and K.W. Watson. A comparison of field techniques for confirming dense nonaqueous phase liquids. *GWMR* Spring 2002, pages 48-59.

Interstate Technology and Regulatory Cooperation Work Group (ITRC). Dense non-aqueous phase liquids (DNAPLs): review of emerging characterization and remediation technologies. June 2000.

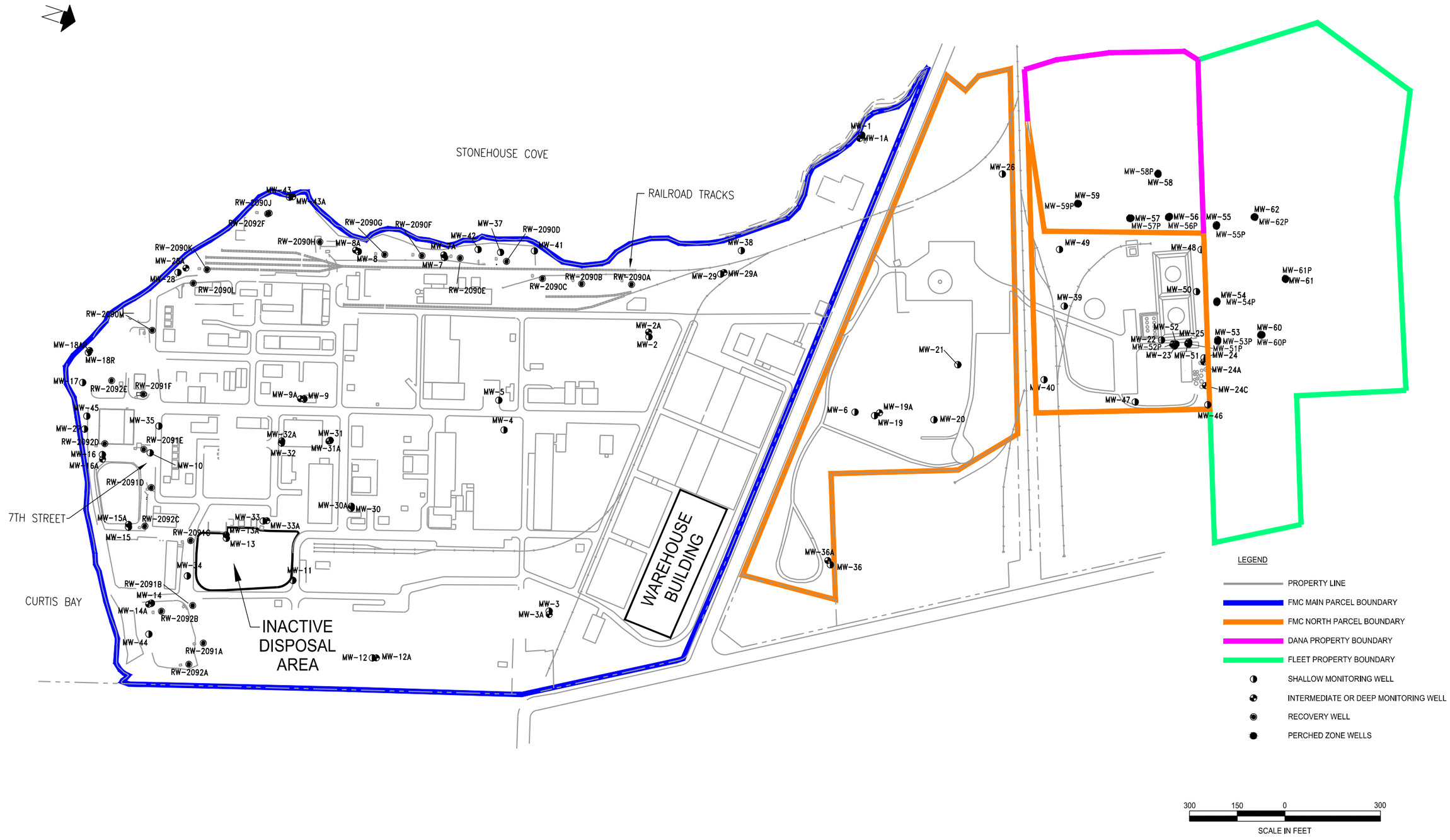
Kram, M.L., A.A. Keller, J. Rossabi, L.G. Everett. DNAPL characterization methods and approaches, part 1: performance comparisons. *GWMR* Fall 2001, pages 109-123.

Kueper, B.H. and K.L. Davies. Assessment and delineation of DNAPL source zones at hazardous waste sites. USEPA Ground Water Issue. EPA/600/R-09/119. September 2009.

United States Environmental Protection Agency (USEPA). Site characterization technologies for DNAPL investigations. EPA 542-R-04-017. September 2004.

FIGURES

FIGURE 1
SITE PLAN
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



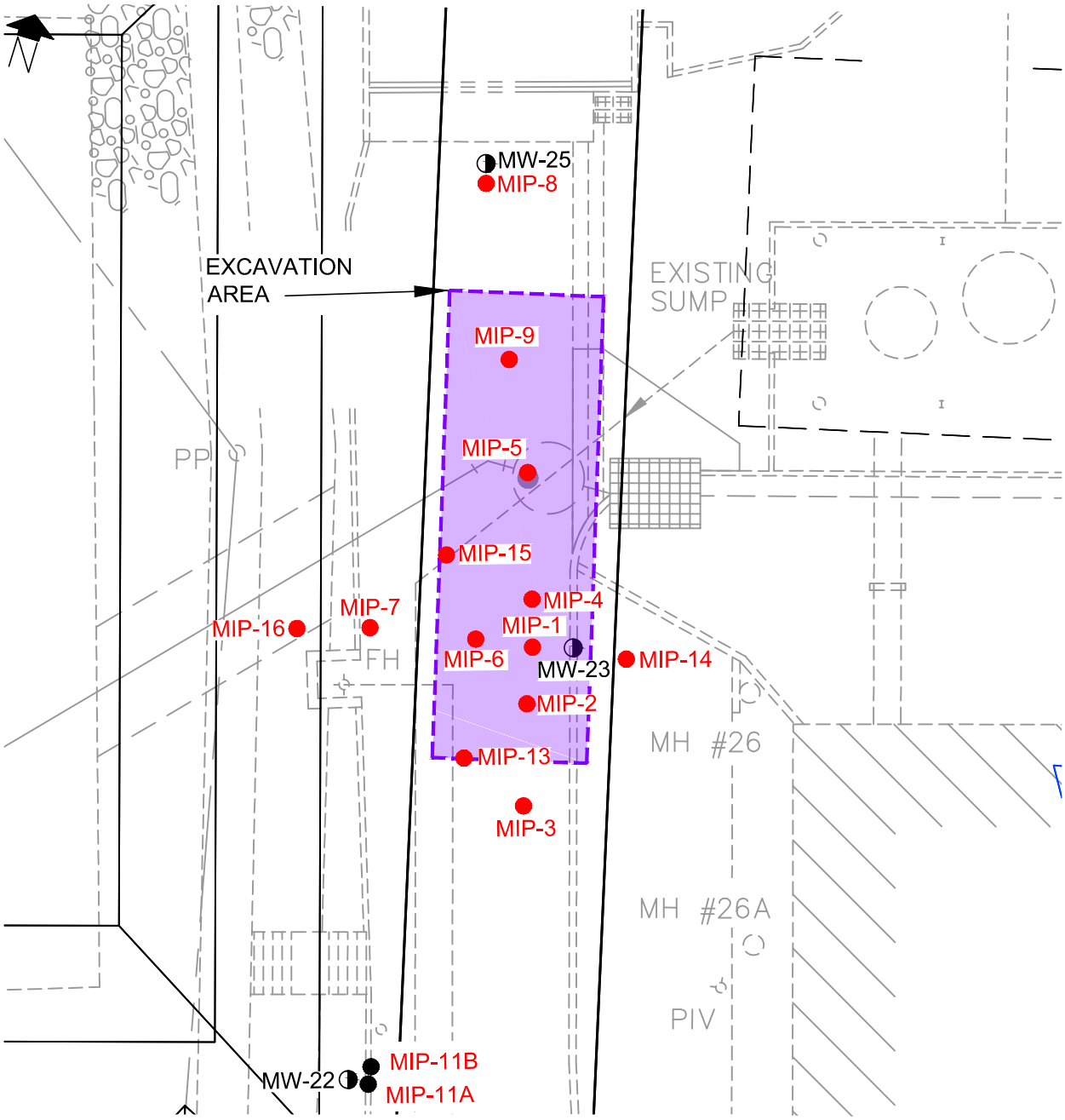
ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

N:\Projects\Spencer's Projects\Drawings-2013\FMC Baltimore\0176466\Figure 1 Site Plan.dwg

SR/EMF - 12/23/15

ERM, INC.

FIGURE 2
MEMBRANE INTERFACE PROBE LOCATIONS AND EXCAVATION AREA
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ABBREVIATIONS & LEGEND

- MEMBRANE INTERFACE PROBE LOCATIONS
- MONITORING WELL
- FH — FIRE HYDRANT
- PIV — POST INDICATOR VALVE
- PP — POWER POLE
- MH — MANHOLE
- SIV — SEWER INDICATOR VALVE
- CB — CATCH BASIN
- 8' CHAIN LINK FENCE
- EXISTING STONE BERM(U.N.O)

15 7.5 0 15
SCALE IN FEET

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TABLE

Table 1
NAPL Field Screening Method Evaluation
FMC Baltimore Former Agricultural Products Group Facility

Method	*Pros*	*Cons*	*Retained?*	*References*
Head Space Screening - PID	-Rapid screening technique -Easy and inexpensive to implement	-Results are not always consistent with laboratory results -Does not provide compound specific information	Yes	Griffin and Watson, 2002
Head Space Screening - Draeger Tube	-Rapid screening technique -Easy and inexpensive to implement	-Results are not always consistent with laboratory reports -Detection limits for chlorobenzene are too low for use in determining absense or presence of NAPL (5 to 200 parts per million)	No	Griffin and Watson, 2002
Hydrophobic Dye (Sudan IV or Oil Red O)	-Inexpensive -Instant and easy to interpret results ("go"/"no go") -Direct line of evidence -Enhances accuracy of unaided visual observation and/or soil-water"shake" test -Proven, effective screening tool	- Contaminants must be light enough in color to see dye - Sudan IV is toxic and must be handled carefully - Less effective on soils with high clay percentages -Esters may interfer with dye's ability to stain DNAPLs	Yes	Kueper and Davies, 2009; USEPA, 2004; Kram et al., 2001
UV Fluorescence	-Instant results -Easy to implement -Results do not require interpretation	-Indirect evidence -May have false positives -Most effective on petroleum compounds	Yes	Kram et al., 2001
GPR	-Contaminants with dielectric properties may appear as "bright spots" or anomalies when mapped	-Indirect line of evidence and does not provide direct measurements -DNAPL concentrations must be high - Requires interpretation based on existing subsurface condition information -Results are dependent on soil moisture conditions and soil type	No	ITRC, 2000
Emerging Direct Push Technologies and *In Situ* Techniques	-e.g. Ribbon NAPL sampler, Partioning Interwell Tracer Test -Provide rapid and minimally invasive results	-Not amenable to field screening during excavation activities	No	ITRC, 2000
Laboratory Analysis	-Provides quantitative, compound specific results -Accurate reference point for comparing field screening techniques	-Expensive -Does not provide real time results	Yes	

FMC Corporation

Appendix B

Preliminary Technical Specifications

Former Agricultural Products Group Facility Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

LIST OF PRELIMINARY TECHNICAL SPECIFICATIONS

Division 1 – General Requirements

01010 Summary of Work

01060 Regulatory Requirement and Responsibility to the Public

01400 Quality Control

01430 Environmental Protection

Division 2 - Sitework

02200 Earthwork

02232 Granular Materials

02250 Transportation and Disposal of Materials

02511 Asphalt Paving

02711 Geotextile

02713 HDPE Geomembrane

Division 15 – Mechanical

15200 High Density Polyethylene Pipe

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 1 - GENERAL REQUIREMENTS

01010
SUMMARY OF WORK

PART 1-GENERAL

1.01 DEFINITIONS

A. Whenever the following terms are used in these Specifications, it is understood that they represent the following:

1. OWNER and Property Owner:
FMC Corporation
1735 Market Street
Philadelphia, Pennsylvania 19103

2. Property Address:
FMC Corporation
1600 East Patapsco Avenue
Baltimore, Maryland 21226

3. ENGINEER, ENVIRONMENTAL CONTRACTOR or OWNER'S REPRESENTATIVE:
To be determined

4. CONTRACTOR:
The individual, firm, partnership, or corporation determined to be the developer.

1.02 SITE CONDITIONS

A. General

There will be no payment for any extras as a consequence of the CONTRACTOR's misunderstanding the descriptions contained in the Contract or Technical Specifications and Contract Documents. The CONTRACTOR shall inspect the site and request answers to all questions that relate to the Work, its execution, and other details prior to submitting a Bid.

B. The Contract Documents, as referenced in these Technical Specifications, depict the location of the site and describe the types of access roads that lead to the site. It is the CONTRACTOR's sole responsibility to use and maintain present access beyond the location depicted in the Contract Documents. Any access roadways, marshalling yards, storage areas, Work areas or other areas that the CONTRACTOR must use are the CONTRACTOR's sole responsibility to keep passable at all times at its cost. The CONTRACTOR shall understand that certain access roadways must be used by the OWNER to maintain access to Work areas; the CONTRACTOR shall cooperate with others in the establishment and

maintenance of these common access roadways. Further, access to the site by the CONTRACTOR through areas other than the dedicated points as indicated in the Contract Documents is prohibited, unless otherwise previously approved by the OWNER.

C. Night and Sunday Work

Unless otherwise specifically authorized by the OWNER or ENGINEER, no Work shall be done between the hours of 6:00 p.m. and 7:00 a.m. or on Sunday, except as necessary for the proper care of and protection of Work already performed.

D. Work in Bad Weather

During freezing, stormy or inclement weather, no Work shall be done except such as can be done satisfactorily and in a manner to secure safe first-class construction throughout. Material backfill and compaction shall not be undertaken during freezing, heavy precipitation, or otherwise inclement weather, as determined by the ENGINEER.

1.03 CODES AND STANDARDS

A. The Work shall conform to all local, state and federal construction codes, comply with industry and regulatory standards as referenced in these Technical Specifications, and adhere to regulatory requirements presented in Section 01060-REGULATORY REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC, which are described elsewhere in these Technical Specifications. The latest issue shall be used unless specifically noted otherwise.

1.04 SCOPE OF WORK

A. The Scope of Work shall include, but not be limited to furnishing all labor, materials, methods, services, tools, machinery and equipment necessary for the implementation of the Work as specified in these Technical Specifications.

B. The CONTRACTOR shall supply all necessary materials except those specifically designated as furnished by the OWNER, the ENGINEER, or furnished by others.

C. The Work shall include the following:

1. Excavating and managing impacted soils from the areas designated on the Drawings;

2. Transportation and disposal of impacted soil;

3. Furnishing, preparing, hauling, placing, and compacting a 1.5 foot layer of common fill;

4. Furnishing, preparing, hauling, testing, and placing a 0.5 foot layer of topsoil;

5. Furnishing, preparing, placing asphalt or concrete cover system;

6. Furnishing, preparing, installing a subslab vapor barrier;

7. Dust control; and

8. Restoring the site.

D. The Work covered under this Contract shall include, but is not limited to the following items:

1. Mobilization/demobilization;

2. Establishing sanitary facilities and potable water at or near the project site for control of the project and use by the CONTRACTOR, OWNER, ENGINEER and visitors at the site;

3. Establishment and maintenance of erosion and sediment controls and surface water management features, as required by regulations, in order to minimize releases of sediment and surface water run-off from the site to the surrounding environment;

4. Preparing the Site for Work, including but not limited to, staging and stockpile area preparation, clearing vegetation, removing fencing and other existing features, access establishment and traffic control, dust control, health and safety provisions, utility location verification, protecting features to remain, and other preparatory work;

5. Verification of existing field conditions as defined in these Technical Specifications;

6. Execution of the work listed under 1.04C;

7. Other Work indicated within these Contract Documents, or as otherwise required for a complete and proper implementation of the Work.

1.05 QUALITY ASSURANCE:

A. All work shall be in accordance with Section 01400 – QUALITY CONTROL.

B. The CONTRACTOR warrants in presenting a Bid that all Work will be performed to the highest standards. The CONTRACTOR further warrants that defects that are the result of the CONTRACTOR's methods, workmanship, or protection of Work will be corrected, removed, and/or replaced at the CONTRACTOR's expense immediately. Further, the CONTRACTOR shall warrant all Work and repairs for one year after the completion and acceptance of the Work or repairs.

1.06 COOPERATION

A. There may be other contractors, project and property owner personnel and/or regulators periodically present at the site. The CONTRACTOR shall make every effort reasonably possible to cooperate with all authorized outside personnel. Any disputes shall be settled by and at the sole discretion of the OWNER.

B. All construction activities shall be carried out in such a manner that there shall be absolutely no possibility of interruption of any operations occurring in the remaining portions of the property owner facility or on the Solutia site.

1.07 CARE AND STORAGE OF MATERIALS

A. The CONTRACTOR shall unload, inspect, and store all equipment and material items delivered, to project site for its Work, including items supplied by the OWNER, the ENGINEER, or furnished by others. Materials shall be stored on-site only in areas designated by the ENGINEER for that purpose.

B. The CONTRACTOR shall replace, at its sole expense, all OWNER, ENGINEER, furnished by others, and/or CONTRACTOR-furnished materials damaged by the CONTRACTOR or the CONTRACTOR's Subcontractors during unloading and storage, damaged by weather, or other related causes.

C. Special attention shall be paid to instructions issued by the manufacturer for handling and storage of materials and/or equipment. These instructions shall be followed in every respect.

D. The CONTRACTOR shall be solely responsible for all security of equipment and material items delivered to the Site for its Work, including items supplied by the OWNER, the ENGINEER, or furnished by others. Replacement of any equipment or material shall be at the sole expense of the CONTRACTOR.

1.08 CONTRACTOR'S RESPONSIBILITIES AND WORK

A. The CONTRACTOR shall furnish all construction equipment, machines, tools, materials, field sanitary facilities, security, protection of Work, other services, supplies, labor, and supervision that are necessary to complete the Work and requirements as described or implied in these Technical Specifications and Contract Documents.

B. The CONTRACTOR shall provide all transportation for the items included in Part 1.08A of this Section from its headquarters or other locations to and from the site.

C. The CONTRACTOR shall furnish all housing, travel, required training, personal safety equipment, and related allowances required by its employees to meet the minimum standards of the ENGINEER and the Site Health and Safety Plan. No housing facilities shall be permitted on the site.

D. Neither the CONTRACTOR nor any of its employees shall drive or park any vehicle anywhere on the site, except at such locations as shown or as specifically approved by the ENGINEER and as permitted by the property owner.

E. The CONTRACTOR shall provide sufficient workers and supervisory personnel to maintain Work progress so that the various areas of Work will be completed in accordance with the schedule or sequence defined elsewhere in these Technical Specifications. Workers employed on the site shall be direct, full-time employees of the CONTRACTOR and not obtained from local resources, except those employed in the transportation and disposal of waste materials. If, in the opinion of the ENGINEER, the Work is behind schedule or is improperly staffed, the ENGINEER will direct the CONTRACTOR to increase its complement of supervisors, workmen, or equipment from internal resources so as to comply with the schedule. The CONTRACTOR shall discharge any such directives promptly and without expectation of additional compensation. If the CONTRACTOR fails to discharge any of these directives, the ENGINEER may arrange for such directives to be discharged at the sole cost of the CONTRACTOR.

F. The CONTRACTOR shall make all overtime, premium, and incentive payments to the CONTRACTOR's employees that may be required to complete the Work in accordance with the schedule. No exceptions shall be allowed for lack of performance, late material deliveries, or interference with other contractors possibly employed at the site or with the ENGINEER's personnel.

G. The CONTRACTOR shall include the cost of the State of Maryland sales tax in its Bid for all expenditures by the CONTRACTOR which will require payment of sales or use tax under State of Maryland law.

H. The CONTRACTOR shall obtain any State of Maryland, county, or local building permits required in the performance of its Work, except as otherwise provided by the ENGINEER.

I. Prior to a Contract award, any questions or assistance the CONTRACTOR may request shall be directed to the ENGINEER exclusively; CONTRACTOR shall not direct requests to the OWNER or property owner.

J. By submitting a Bid for the Work, the CONTRACTOR acknowledges to be entirely familiar with the requirements prescribed by the State of Maryland that relate to the Work, with regulations prescribed by the United States Environmental Protection Agency (USEPA), with the rules and regulations of OSHA, and with local conditions, including weather, availability of supplies, and logistics. The CONTRACTOR further acknowledges itself to be entirely qualified to perform the Work described by these Technical Specifications and the Contract Documents.

K. The CONTRACTOR shall maintain the site of its activities free of refuse and debris at all times at their expense. The CONTRACTOR shall, promptly comply with any directives from the OWNER, or the OWNER'S REPRESENTATIVE, regarding housekeeping. The CONTRACTOR shall provide the appropriate containers at convenient locations for the disposal of paper cups, disposable personnel protection equipment and other items of trash. Upon completion of the Work and before final payment, the CONTRACTOR shall completely remove all tools, equipment, supplies, materials, structures, and debris from the site and leave the premises clean. Debris shall be removed to disposal locations, off the site that are selected by the CONTRACTOR, and are permitted to receive the debris to be disposed, and prior approved by the ENGINEER. Refuse shall be accumulated for a minimum of weekly disposal.

L. The CONTRACTOR shall be responsible for all engineering and corresponding support required to perform the scope of work established in the Contract Documents, including but not limited to design and/or verification of shoring, bracing, demonstration of equivalent materials, or other such matters that require engineering expertise.

M. Safety

It is the CONTRACTOR's responsibility to perform all Work in a safe manner, and meet all applicable federal, state and local laws and those requirements imposed by the OWNER and OWNER'S REPRESENTATIVE. The CONTRACTOR shall submit a site Health and Safety Plan (HASP) to the ENGINEER for review prior to the initiation of any activity at the site. The plan shall meet, or exceed, all requirements specified in the Contract Documents and federal, state, and local regulations.

N. Environmental Protection

All Work to be performed by the CONTRACTOR as a part of this project is regulated by the appropriate environmental laws, regulations, codes and directives of the United States Environmental Protection Agency, the Maryland Department of the Environment, and the City of Baltimore, Maryland. By acceptance of the terms of the Contract, the CONTRACTOR acknowledges that it is familiar with the rules and regulations of all applicable federal, state and local regulatory agencies controlling the Work and is familiar with, and accepts as a condition of this Contract, all of the terms, stipulations, and commitments pertaining to the Work. Questions concerning the permits or regulations shall be referred to the ENGINEER; the ENGINEER'S decision in all cases shall be final.

O. Utilities

1. The CONTRACTOR shall make arrangements for obtaining water for drinking, for use in dust control, or other purposes in connection with the Work under this Contract. The cost for both establishing water service and usage shall be the responsibility of the CONTRACTOR.

2. Sanitary Facilities. A sufficient number of chemical-type sanitary structures shall be provided for CONTRACTOR, ENGINEER/OWNER and visitor personnel on the project.

PART 2- PRODUCTS

2.01 REGISTERED TRADE NAMES

A. Products may be referenced and specified throughout these Technical Specifications by registered trade names. This usage does not constitute a recommendation of these products to the exclusion of other products solely as a result of the use of the reference. Equivalent products may be used upon receiving approval of the ENGINEER.

B. The reference to registered trade names establishes a standard of required function, dimension, appearance and quality of the required equipment, materials or products.

PART 3-EXECUTION

(not used)

END OF SECTION

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01060
REGULATORY REQUIREMENTS
AND
RESPONSIBILITY TO THE PUBLIC

PART 1 - GENERAL

1.01 REGULATIONS

A. The Work shall be performed in accordance with all applicable federal, state, county, and municipal regulations.

B. The CONTRACTOR shall give all necessary notices, obtain all permits and pay all fees and other costs in connection with the Work, file all necessary plans, prepare all documents and obtain all necessary approvals of all governmental departments having jurisdiction, unless previously obtained by the ENGINEER. The CONTRACTOR shall obtain all required Certificates of Inspection and approval for the Work and deliver these documents to the ENGINEER, except as noted.

C. The CONTRACTOR shall include in the Work, without extra cost to the OWNER, labor, materials, services and drawings required to comply with all applicable laws, ordinances, rules and regulations, whether or not shown in the Contract, Technical Specifications, or Contract Documents.

D. The CONTRACTOR shall become familiar with all federal, state, local and municipal laws, ordinances, rules and regulations which in any manner affect those engaged or employed in the Work, or the materials or equipment used in or upon the Work, or in any way affect the Work, and no pleas of misunderstanding will be considered on account of the ignorance thereof. If the CONTRACTOR discovers any provision in the Contract, Technical Specifications, or Contract Documents which is contrary to, or inconsistent with, any such law, ordinance, rule or regulation, he shall forthwith report it to the ENGINEER in writing.

E. For the security and safety of persons in or adjacent to construction operations, the property owner's and the OWNER's security and safety standards and the "Manual of Accident Prevention in Construction" of the National Safety Council shall be followed as applicable, specifically or with similarity of operation, or as in the opinion of the governing jurisdictions may be necessary for protection.

1.02 RESPONSIBILITY TO THE PUBLIC

A. Traffic

1. Construction operations shall be programmed and conducted to maintain adequate roadway and pedestrian traffic within and adjacent to the site for the Contract duration, including but not limited to the following: flagmen and watchmen; furnishing, erecting and proper maintenance, removal and disposal of traffic controls.

2. Pedestrian access to abutting properties and vehicular access for ambulances, police and fire or other emergency equipment shall be maintained at all times. When vehicular access is temporarily curtailed, it shall be the CONTRACTOR's responsibility to give adequate notice to affected parties including, but not limited to the police department having jurisdiction for the site, fire department and emergency ambulance services prior to impairing access, and to provide means of temporary access when and if required.

3. When traffic is interrupted, every effort shall be exercised to restore normal traffic as soon as practicable.

4. Furnishing, erecting, proper maintenance, relocation, removal and disposal of necessary signs, barricades, cones, warning lights, and other traffic controls shall be in accordance with local requirements and ordinances.

5. The CONTRACTOR shall conduct all operations in a manner which complies with all applicable laws and ordinances, and which will in no way discredit the OWNER or the property owner at any time.

6 Construction operations shall be programmed and conducted not to impede the daily activities of the surrounding population or industrial facilities. Access to the Site shall be limited to the entrance from Pickens Road unless otherwise pre-authorized by the property owner and the ENGINEER. Additional access may be granted to assure one-direction traffic flow and minimize traffic interferences that could create safety concerns.

B. Sanitary Provision

1. The CONTRACTOR shall provide adequate sanitary facilities, per local and federal regulations, for the use of those employed on the Work. Such facilities shall include, but not be limited to restrooms. Such facilities

shall be made available when the first employees arrive on site for the Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required or approved.

2. The CONTRACTOR shall maintain the facilities in a satisfactory and sanitary condition at all times and shall enforce their use. The CONTRACTOR shall rigorously prohibit the committing of nuisances on the site of the Work or on adjacent property.

C. Protection of Property

1. All property along the line of the Work, or which is in the vicinity of, or is in any way affected by the Work, shall be protected and preserved from damage by the CONTRACTOR. Trees, fences, water or gas pipes, sewers, drains, conduits, poles or wires for electrical purposes, or other structures shall not be involved without consent of the persons owning or controlling them, and in crossing or working near them, they shall be sustained securely in place and shall be so treated as to render their condition as efficient and permanent as before.

2. Property damaged shall be immediately repaired and restored at the expense of the CONTRACTOR, or if required, the CONTRACTOR shall make the necessary repairs. In case of failure on the part of the CONTRACTOR to restore such property as it deems necessary, the ENGINEER shall have repairs made and any cost thereof shall be deducted from payments due, or which may become due to the CONTRACTOR under this Contract.

a. Existing Underground Utilities

The CONTRACTOR shall be responsible for determining the exact location of each overhead and subsurface utility within any area of Work. Miss Utility shall be contacted 72 hours prior to any excavation at 1-800-257-7777. Given the on-site location of the Work, a private utility locator may also be required to specifically locate utilities within the Work area. Care shall be exercised during such location work to avoid damaging and/or disrupting the affected utility. The CONTRACTOR shall be responsible for repairing, at its expense, damage or damages to any utility caused by its work occurring during the period of construction or within the period covered by its guarantee bond. Unless otherwise noted, all overhead or underground utilities in actual line and/or grade

of a proposed activity, requiring adjustment to permit proper execution of the Work, shall be adjusted by others during the construction operations without charge to the CONTRACTOR.

When operating in close proximity of a utility or structure, the ENGINEER, shall be notified thereof sufficiently in advance so that the proprerty owner may accomplish any special protective measure deemed necessary. Construction operations shall be so conducted as to facilitate access to utility structures by the ENGINEER or its agents.

b. Protection of Trees

Any trees not specified for removal, or as pre-approved by the ENGINEER, shall be protected by the CONTRACTOR. Operation of all equipment, storage of materials, disposition of excavated material and construction in general shall be conducted so as not to injure tree trunks, branches or roots. In general, excavations will not be within the limits of the limb spread of trees.

PART 2 - PRODUCTS

(not used)

PART 3 - EXECUTION

(not used)

END OF SECTION

01400
QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included

1. Where applicable in the Contract Documents, the minimum acceptable quality of equipment, materials, and workmanship has been defined either by a manufacturer's name and product identification, or by reference to recognized industry standards. Standards, testing protocol, inspection procedures, and additional requirements are referenced in these Contract Documents.

2. To ensure that the necessary materials and equipment are furnished, procedures are established herein to allow the CONTRACTOR to obtain approval by the ENGINEER for Work which will be in complete accordance with the Contract Documents; and for substitutions to be reviewed by the ENGINEER, or accepted thereby if sufficient data for unqualified approval are submitted by the CONTRACTOR.

3. For products which do not differ significantly from those specified in the referencing Section, or are, in the CONTRACTOR's judgment, of equal or higher quality, the submission of the Materials List as specified in Section 01300 - SUBMITTALS and its approval by the ENGINEER, shall provide the basis for quality control. Actual quality control during manufacture shall be maintained by the approval of the Shop Drawings and by the final submissions of the manufacturer's Certificates of Compliance, and the Testing and Inspection Services; specified herein.

4. If the CONTRACTOR proposes to provide products as "equals" to those specified in the referencing Section on which the design is based, it shall be its responsibility to furnish complete, specific, detailed information to the ENGINEER for approval, in which the requirements of the Contract Documents are shown to be met.

   a. These data shall be prepared or approved by the manufacturer of the proposed product, and shall include a point-by-point comparison between the features of the proposed product and the corresponding features of the product specified in the Contract Documents as the one on which the design is based. The features of the product specified shall be those of the manufacturer's model specified (including all standard catalog features and any

specified options) which were published on the date of the Invitation for Bids.

b. If applicable, the CONTRACTOR shall also furnish a description of the changes in structures and other equipment which will have to be made because of the proposed substitution.

c. The burden of responsibility for furnishing these data, documentation, engineering, and certifications for substitute products is with the CONTRACTOR.

d. A request to furnish the substitute product shall not be considered if incomplete or irrelevant data are submitted as evidence of compliance with the requirements.

1.02 QUALITY CONTROL

A. Qualification of Manufacturer/Installer

1. The manufacturer/installer shall be regularly engaged in the business of manufacturing material, installing and/or equipment of the type required by the referencing Section.

2. The manufacturer/installer shall be one of those specified by name in the referencing Section, or must be specifically approved by the ENGINEER.

a. Requests for approval of a manufacturer/installer not named in the referencing Section shall be submitted to the ENGINEER, accompanied by the following information:

1) List of at least five (5) installations of material and/or equipment of comparable size and capacity, and operating under anticipated service conditions; showing location, installation date, model, capacity, and service.

2) If the manufacturer/installer cannot list five (5) installations; list all those which have been made, if fewer than five (5).

3) Complete literature, technical, and performance data describing the proposed equipment.

4) The manufacturer's standard installation, operating, and maintenance instruction bulletins for the proposed equipment.

b. The ENGINEER shall notify the CONTRACTOR, in writing, that the manufacturer selected by the CONTRACTOR is approved; or shall request further data to justify the selection. Upon the approval of the manufacturer, the CONTRACTOR shall update the Materials List and submit this to the ENGINEER.

c. If the ENGINEER requests additional data on the actual performance of the equipment or system, the CONTRACTOR shall submit evidence that the equipment or system proposed has been installed and has been in operation for a period prior to the date of Invitation for Bids, and that at least two (2) years of such service are considered satisfactory by the operating superintendents of the facilities in which installed. The service and operating conditions for the equipment or system shall be as similar to those described in these Contract Documents, as is practical.

1) The ENGINEER shall review the experience record of the equipment or system proposed to be installed by the CONTRACTOR, and shall advise the CONTRACTOR, in writing, as to whether or not it appears to be suitable for installation under this Contract.

d. If acceptable evidence of satisfactory experience with the proposed material and/or equipment cannot be furnished, but the CONTRACTOR still elects to provide it, the ENGINEER may accept the installation, but to protect the OWNER's interest in the event that the material and/or equipment does not meet the intended use requirements the CONTRACTOR shall submit a bond or deposit in the amount of the portion of the total Contract price represented by the material and installation cost, including overhead profit of the material and/or equipment being proposed. The period of time for which the bond or deposit shall remain in effect shall be two (2) years after final acceptance of the Work. The bond or deposit shall be used by the OWNER to pay for its costs to replace the material and/or equipment with that of an alternative manufacturer or supplier, if the material and/or

equipment when installed does not perform in accordance with the intended use, in the judgment of the OWNER.

1) The original material and/or equipment which has been replaced shall become the property of the CONTRACTOR, who shall promptly remove it from the site.

2) The CONTRACTOR shall be given reasonable opportunity to modify the equipment furnished, if necessary, so that it will be acceptable to the OWNER or the ENGINEER. Continuous operation in accordance with time for such modifications shall be maintained.

3) The decision of the OWNER with respect to replacing unsatisfactory equipment shall be final.

e. Neither approval by the ENGINEER of the CONTRACTOR's selection of a particular manufacturer or system supplier, nor accepting the CONTRACTOR's selection together with the posting of a bond or deposit in lieu of satisfactory evidence of experience, shall obligate the ENGINEER to approve details on the Working Drawing submissions from that manufacturer which are not in conformance with the requirements of the Contract Documents.

f. Neither approval by the ENGINEER of the CONTRACTOR's selection of a particular manufacturer, equipment supplier, or installer, nor accepting the CONTRACTOR's selection together with the posting of a bond or deposit in lieu of satisfactory evidence of experience, shall relieve the CONTRACTOR of its obligations to fulfill all requirements of the Contract Documents.

3. When so specified in the referencing Section, the manufacturer of the equipment or supplier of the system shall furnish, as requested by the ENGINEER, and at no additional cost to the OWNER, the services of a qualified Technical Representative to advise the ENGINEER and the CONTRACTOR in the installation and operation of the equipment or system, and to certify to the ENGINEER, in writing, that the equipment or system is properly installed and ready to be operated.

B. Installation Requirements

1. The CONTRACTOR shall provide at least one person who shall be present at all times during the installation of the items of equipment furnished under the referencing Section who is thoroughly familiar with the type of materials being installed and with the manufacturer's recommended methods of installation and operation, and who shall direct all the Work performed on the equipment item being installed, at no additional cost to the OWNER.

2. The person providing the above service need not be an authorized representative of the manufacturer except when the warranty of the manufacturer shall be voided if not installed by an authorized representative. The Certificate of Compliance required by Section 01300 - SUBMITTALS must be issued by the manufacturer of the equipment or supplier of the system.

C. Codes and Standards

1. Equipment and installation shall comply with all pertinent federal, state and local codes and regulations.

2. Materials, equipment, and installation shall comply with:

a. The minimum standards of the governmental agency or industry standardizing organization publishing standards applicable to such Work.

b. The requirements of specific standards listed in the referencing Section.

c. Where the standards of several organizations (including the manufacturer's own published standards) are applicable to the same Work, the Work may be done in accordance with any such other standards that require an equal or higher quality construction for the specified service than those listed in the referencing Section. The selection of such an alternate standard to the one specified shall be subject to the approval of the ENGINEER.

3. Where any provisions of pertinent codes or standards are in conflict with the requirements of the Contract Documents, the provisions requiring greater safety or operability, or higher quality construction for the specified service shall govern, unless specific exemptions to such provisions are made in the referencing

Section. The final determination shall be made by the ENGINEER.

4. If the mandatory standards of governmental agencies are revised subsequent to the date of issue of the Invitation to Bid, but are made applicable to the Work under this Contract, the CONTRACTOR shall advise the ENGINEER as to the additional cost required to comply with such revisions, and a Change Order will be issued to cover such costs. The cost of rework required for Work not complying with such revised regulations, but installed after the effective date of such code revisions, will be at the CONTRACTOR's expense.

5. The CONTRACTOR shall document construction and installation activities. At a minimum, installation records shall contain the minimum information: time, place, installer, personnel, equipment used or required, testing performed, test locations, results of testing, installation percent completed, duration, conflicts, resolution to conflicts, safety requirements/actions, site conditions, weather, and all other information required to document the proper installation and certification.

D. At the discretion of the ENGINEER, the CONTRACTOR shall make available any materials related to the Work, including but not limited to soils, granular materials, and geotextile for confirmation quality control sampling by the ENGINEER.

PART 2 - PRODUCTS

2.01 DESIGN

A. The design of certain items at the Site, as shown in the Contract Documents, is based on the performance and dimensions of specific equipment items as furnished by particular manufacturers.

1. When the performance or dimensions of such items are proprietary, and furnished only by one particular manufacturer, the referencing Section will state the design is based on a particular model of that manufacturer.

a. The CONTRACTOR may furnish and install corresponding products produced by an alternate manufacturer; either one named as an alternate in the referencing Section, or any other one selected by the CONTRACTOR and approved or accepted by the ENGINEER on the basis of the information supplied as

requested in Part I of this Section.

b. The CONTRACTOR shall furnish the ENGINEER with those data on the particular model of the alternate manufacturer which are required to demonstrate that the proposed equipment or system is at least equivalent in performance in the specified service to the equipment or system on which the design is based. The ENGINEER's evaluation will include a determination of the ability of the proposed equipment to meet the requirements of these Drawings, and a comparison of the costs of Operation and Maintenance. If the CONTRACTOR proposes a modification to the Contract Price due to the substitute equipment, this will also be evaluated by the ENGINEER.

c. Approval by the ENGINEER of the proposed substitution will not be capriciously withheld.

d. The design of the facilities associated with the equipment or system for which a substitution is proposed may be affected by such substitution. The size of the building or supporting structure, the size and arrangement of piping and wiring, the specification for associated equipment, the necessary controls, and the service requirements will have to be reconsidered by the CONTRACTOR. The CONTRACTOR shall be completely responsible for the necessary engineering, redesign and certification of all facilities affected by the substitution, and shall prepare the revisions to the Drawings required by such substitution. These revisions shall be submitted to the ENGINEER for approval, in accordance with the provisions in Section 01300 – SUBMITTALS, including the specific notice as to the details in which the substitute design differs from the requirements of the Contract Documents. All such redesign and all new drawings and detailing required as a result thereof shall be prepared by the CONTRACTOR, or its Subcontractors, at its own expense. Requests for additional payment for such substitution will not be considered unless made a part of the final request for approval of the substitution itself.

2.02 MATERIALS

A. All materials, including those not specifically described or specified, but required for a complete and proper installation of Work shall be new, first

quality of their respective kinds, and subject to the approval of the ENGINEER.

B. All materials shall be in accordance with details and samples as specified in the referencing Section; and submitted and approved in accordance with Section 01300 - SUBMITTALS.

2.03 INTERCHANGEABILITY

A. All products of the same size and type and performing the same function shall be, insofar as practical, the products of one manufacturer.

1. Details in the Shop Drawing submissions of the several equipment manufacturers shall be coordinated so that items such as lubricating fittings, for example, are identical on all equipment items requiring the same grade of lubricant.

PART 3 - EXECUTION

3.01 INSTALLATION CONDITIONS

A. Inspection

1. Prior to any Work on a specific equipment unit or material installation, the CONTRACTOR shall carefully inspect the existing and previously installed Work, and verify that all Work is in such a condition that the installation of new Work may properly commence and be carried out to a proper and timely completion.

2. The CONTRACTOR shall verify that each item of Work shall be installed in accordance with all pertinent codes and regulations, the approved design, and the referenced standards.

3. The ENGINEER shall periodically inspect the Work to provide quality assurance in accordance with these Contract Documents.

B. Discrepancies

1. In the event of discrepancies, the CONTRACTOR shall immediately notify the ENGINEER, in writing, of such conditions.

2. The CONTRACTOR shall not proceed with installation in areas of discrepancy until such discrepancies have been corrected in a manner acceptable to the ENGINEER.

3. For any unexpected features arising during the progress of Work and not fully covered herein, the Specifications shall be interpreted by the ENGINEER, or its Representative, to require first-class workmanship and materials, and such interpretation shall be accepted by the CONTRACTOR.

3.02 INSTALLATION

A. The CONTRACTOR shall install each equipment item in strict accordance with the manufacturer's instructions, unless specifically directed otherwise by the ENGINEER. The CONTRACTOR shall not void the manufacturer's guarantee.

B. In the event of discrepancies between the Contract Documents and the equipment manufacturer's formal installation instructions, as submitted for the actual units supplied, the CONTRACTOR shall notify the ENGINEER, in writing, of such discrepancies. The CONTRACTOR shall obtain the equipment manufacturer's approval in writing for any changes required to suit the Site conditions, and so advise the ENGINEER.

END OF SECTION

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01430
ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 DESCRIPTION

The CONTRACTOR shall perform all Work in such manner as to minimize the polluting of air, water, or land, and shall, within reasonable limits, control noise and minimize the generation and disposal of solid waste materials, as well as other pollutants. Disposal of waste materials shall comply with all applicable federal, state, county, and environmental regulations.

1.02 PRE-CONSTRUCTION WALK-THROUGH

Prior to the start of any on-Site construction activities, the CONTRACTOR and the ENGINEER shall make a joint condition survey of the Site after which the CONTRACTOR shall prepare a brief report indicating on a layout plan the condition of structures, fences, equipment, stored product and materials, and items near the Work areas and access route(s) as applicable. This report will be signed by both the ENGINEER and the CONTRACTOR upon mutual agreement as to its accuracy and completeness.

1.03 PROTECTION OF LAND AREAS

A. Except for any Work, or storage area and access routes specifically assigned for the use of the CONTRACTOR, the land areas outside the limits of disturbance performed shall be preserved in their present condition.

B. The CONTRACTOR shall confine its construction activities to areas defined for Work on the Drawings or specifically assigned for its use within the designated disturbed area. Storage and related areas and access required temporarily by the CONTRACTOR in the performance of the Work shall be coordinated with the ENGINEER.

1.04 PROTECTION OF SURROUNDING AREAS

A. Except for trees, shrubs and other vegetation marked on the Drawings to be removed; the CONTRACTOR shall not deface, injure or destroy trees, shrubs, or vegetation nor remove or cut them without special authority. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages.

B. Any tree scarred or damaged by the CONTRACTOR's equipment or operations shall be restored as nearly as possible to its original condition. All scars made on trees not designated on the Drawings to be removed by construction operations shall be coated as soon as possible with an approved tree wound dressing. Trees outside the established clearing

limits that are damaged by the CONTRACTOR so as to be beyond saving, in the opinion of the CONTRACTOR and in consultation with the ENGINEER, shall be immediately removed, if so directed, and replaced with a nursery-grown tree of the same species and size.

C. The CONTRACTOR shall not damage or compromise the integrity of any infrastructure, equipment, materials, or other items not designated for removal or any Work. Any damage to items within or outside the Work area that are not designated for dismantling shall be restored or replaced in kind at no additional cost to the OWNER.

1.05 PROTECTION OF WATER RESOURCES

A. The CONTRACTOR shall control the disposal of fuels, oils, bitumens, calcium chloride, acids, alkalies, pesticides, herbicides, rodenticides, or other harmful materials, both on- and off-Site, and shall comply with applicable federal, state, and local laws concerning the pollution of rivers and streams. Special measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, herbicides, and insecticides from entering public waters.

B. Water used in on-Site decontamination and other waste waters shall not be allowed to re-enter public waters. These waters and decontamination water or fluids shall be contained and disposed at an appropriate facility in accordance with all federal, state and local requirements.

C. Water accumulating within any excavation containing potentially impacted materials shall be removed/dewatered in accordance with these Specifications. Water shall be disposed in accordance with Section 01500 – TEMPORARY FACILITIES AND CONTROLS.

1.06 WASTE DISPOSAL

A. The CONTRACTOR shall place all general debris and waste; i.e., paper, trash, etc., in a storage container provided by the CONTRACTOR for subsequent disposal by the CONTRACTOR. Soil, sediment, unsuitable excavation material (rocks, rubbish, etc.), contact water or demolition debris is not considered general debris, but rather, waste that shall be managed as required in the Contract Documents. If any waste material is dumped in unauthorized areas, the CONTRACTOR shall remove the material and restore the area to the condition of the adjacent undisturbed areas. Where directed, ground areas contaminated by CONTRACTOR operations shall be excavated and/or cleaned, disposed as approved, and replaced with suitable fill material at no additional expense to the OWNER.

B. No material shall be burned on the project Site. It shall be the responsibility of the CONTRACTOR to provide disposal of all waste materials in accordance with all state and county regulations.

1.07 DUST CONTROL

A. The CONTRACTOR shall maintain all excavations, stockpiles, access roads, waste areas, off-site roadways and all other Work areas free from excess dust to such reasonable degree as to avoid causing a hazard or nuisance to others.

B. Approved temporary methods for dust control consist of sprinkling of water or a dilute solution of water with a biodegradable surfactant (less than 0.05 percent). Chemical treatment, tents, windscreens, or similar methods will be considered for dust control. Approval of such temporary methods must be granted by the ENGINEER prior to initiation.

C. Dust control shall be performed as the Work proceeds and whenever a dust nuisance, hazard, or exceedance of predefined action levels occurs, or as otherwise directed by the ENGINEER.

1.08 CORRECTIVE ACTION

The CONTRACTOR shall, upon receipt of a notice in writing from the ENGINEER of any non-compliance with the foregoing provisions, take immediate corrective action in accordance with any and all federal, state, or local laws. If the CONTRACTOR fails or refuses to comply promptly, the ENGINEER may issue an order stopping all or part of the Work until satisfactory corrective action has been taken.

1.09 POST-CONSTRUCTION CLEANUP OR OBLITERATION

The CONTRACTOR shall, unless otherwise instructed in writing by the ENGINEER, obliterate all signs of temporary construction facilities such as temporary access roads, Work areas, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the Work. Any disturbed soil areas shall be graded and filled and the entire area seeded with permanent vegetation, as indicated on the Drawings.

1.10 EROSION CONTROL

A. Surface drainage from cuts and fills, within the construction limits, whether or not completed, and from excavated areas shall be graded to control erosion within acceptable limits.

B. Temporary control measures shall be provided and maintained throughout construction. Such measures shall include, but not be limited to silt fence, filter sock, erosion control mat, and stabilized construction entrance(s). No additional payment will be considered or approved for repair or maintenance of the erosion control measures or for erosion repair.

C. The area of bare soil, exposed at any one time by construction operations shall be minimized to the satisfaction of the ENGINEER.

PART 2 - PRODUCTS

(not used)

PART 3 - EXECUTION

(not used)

END OF SECTION

DIVISION 2 - SITEWORK

02200
EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Work covered by this Section consists of furnishing all labor, materials, tools, equipment and transportation necessary for all construction as it pertains to the excavating, handling, stockpiling, placing, compacting and grading of earthwork. The Work includes all excavating, hauling, stockpiling, covering, wetting or drying, conditioning, compacting and other operations pertaining thereto for constructing and preparing the earthwork complete in accordance with these Specifications and Drawings, or as directed by the ENGINEER.

B. The Work shall include, but not be limited to, the following activities:

1. Excavating and disposing off-site soil from the area identified as the source area;

2. Furnishing, preparing, hauling, placing, and compacting a 1.5 foot layer of common fill;

3. Furnishing, preparing, hauling, testing, and placing a 0.5 foot layer of topsoil;

4. Dust control; and,

5. Restoring the site.

C. No soils shall be removed from the Site unless otherwise instructed or approved by the ENGINEER. All soils shall be removed to the limits and depths required by the Drawings and Specifications, or as otherwise directed by the ENGINEER.

D. Soil types used for backfilling shall consist of material approved and tested by the ENGINEER from an off-Site source.

E. During construction, the construction area shall be well drained. No materials shall be placed when either the material or the surfaces on which it is to be placed is frozen, excessively wet or soft (unless otherwise directed by the ENGINEER). When the Work is interrupted by heavy precipitation or freezing temperatures, fill operations shall not be resumed until the ENGINEER determines that the moisture content and integrity of the placed soils are as specified.

1.02 DEFINITIONS

A. "Topsoil" includes those clean soils, as determined by the ENGINEER, that shall be utilized as the final 6-inch thick surface for any disturbed areas to support vegetative growth.

B. "Common Fill" includes those clean soils, as determined by the ENGINEER, that shall be utilized to create a vegetative cover above impacted soils.

C. "Impacted Soil" includes those soils existing within the area to be covered that are determined to be impacted, as presented on the Drawings and further determined by the ENGINEER.

D. "Clean" with respect to the soils includes those soils for which, based on testing conducted by the ENGINEER. All soils may be deemed clean by the ENGINEER if sampling and testing results meet the USEPA residential regional screening levels or appropriate background levels.

1.03 REFERENCES

A.	ASTM D-422	Particle-Size Analysis of Soils
B.	ASTM D-1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
C.	ASTM D-1557	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 Pound Rammer and 18-Inch Drop
D.	ASTM D-2216	Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
E.	ASTM D-2487	Classification of Soils for Engineering Purposes
F.	ASTM D-2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
G.	ASTM D-4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
H.	ASTM D-4542	Determination of the Soluble Salt Content of Soils

I. ASTM D-4972 pH of Soils

J. ASTM D-6938 Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.04 QUALITY ASSURANCE

A. All materials, procedures, operations, and methods shall be in strict conformance with the Drawings and Specifications, and shall be subject to strict quality control monitoring as detailed herein and in the ENGINEER's Construction Quality Assurance (CQA) Plan. The backfilled soils shall conform to the Drawings and Specifications, except as otherwise authorized in writing by the ENGINEER.

B. The CONTRACTOR shall comprehend and anticipate CQA activities and account for these activities in the construction schedule.

1.05 SUBMITTALS

A. The CONTRACTOR shall submit to the ENGINEER for review a Project Work Plan describing the proposed methods of construction, including excavation, backfilling, compaction, grading, proper staging, and sequencing for the various portions of the Work. The Project Work Plan shall also include a discussion of proposed dust suppression methods. Review shall be for method only. The CONTRACTOR shall remain responsible for the adequacy and safety of the methods.

B. As part of the Project Work Plan, the CONTRACTOR shall submit to the ENGINEER a stockpiling and staging plan prior to the commencement of earthwork activities. The plan shall indicate the location of each stockpile. Stockpiles are to be maintained on protective materials to prevent contact with the underlying soil and within the limits of disturbance; the final stockpiling plan is subject to the approval of the ENGINEER.

C. The ENGINEER shall submit the location of all sources of off-Site borrow to the CONTRACTOR with the bid.

D. The CONTRACTOR shall submit a 50-pound sample from each of the off-Site borrow pits proposed to furnish the required quantity of general fill materials. The samples shall be submitted to the ENGINEER no less than two (2) weeks prior to the anticipated placement of any soil materials. Off-Site borrow sources shall be in compliance with Federal, State and local operation permitting requirements.

E. For the proposed borrow source, the CONTRACTOR shall submit two samples (one form common fill and one from topsoil) proposed to furnish the required quantity of fill materials to an approved laboratory for analytical testing. The analytical tests that shall be conducted include the following:

1. TAL Metals (EPA Method 6020A);

2. Volatile Organic Compounds (VOCs) (EPA Method 8260B);

3. Total Petroleum Hydrocarbons – DRO and GRO (TPHs) (EPA Method 8015C);

4. TCL Semi-Volatile Organic Compounds (SVOCs) (EPA Method 8270D);

5. Polychlorinated Biphenyls (PCBs) (EPA Method 8082A); and,

6. Pesticides (EPA Method 8081B).

The analytical results shall be submitted to the ENGINEER no less than two (2) weeks prior to the anticipated placement of any soil materials. The ENGINEER shall be provided the opportunity to be present during sampling and to identify sample locations. The results shall meet the commercial/industrial soil standards found in the IDEM RCG.

F. The CONTRACTOR shall submit the results of the ASTM tests listed below for each borrow pit location and designated soil classification to verify that the soil materials meet the technical requirements of this Section. A minimum of three (3) tests per source is required. The test results shall be submitted to the ENGINEER no less than two (2) weeks prior to the anticipated placement of any soil materials.

Parameter	ASTM Test Method	Frequency	Fill Classification
Moisture Content	D-2216	One per 2,000 cy or each change in Material Type	Common Fill
Soil Classification	D-2487	One per 2,000 cy or each change in Material Type	Common Fill
Particle-Size Analysis	D-422	One per 2,000 cy for Common Fill and 1,000 cy for Topsoil or each change in Material Type	Common Fill, Topsoil

Parameter	ASTM Test Method	Frequency	Fill Classification
Atterberg Limits	D-4318	One per 2,000 cy or each change in Material Type	Common Fill
Modified Proctor (Moisture-Density Relationship)	D-1557	One per 2,000 cy or each change in Material Type	Common Fill, Impacted Soil
Soluble Salts	D-4542	One per 1,000 cy or each change in Material Type	Topsoil
pH	D-4972	One per 1,000 cy or each change in Material Type	Topsoil
Organic Content	D-2974	One per 1,000 cy or each change in Material Type	Topsoil

1.06 SOIL TESTING

A. During the general placement of the fill the ENGINEER shall select areas within the limits of the fill for testing the degree of compaction obtained. The CONTRACTOR shall be responsible for the cost of all quality control testing. The CONTRACTOR shall cooperate fully to allow the ENGINEER to perform supplemental quality assurance testing.

B. Payment for any in-place quality assurance testing verification will be made by the ENGINEER. If test results are unsatisfactory, all costs involved in correcting deficiencies in compacted materials to the satisfaction of the ENGINEER and any additional costs for retesting will be borne by the CONTRACTOR.

C. The testing frequency required in Paragraph 1.05 of this Section may be increased at the discretion of the ENGINEER when visual observation or construction performance indicates a potential problem.

PART 2 - MATERIALS

2.01 IMPACTED SOIL

Approximately 200 cubic yards of impacted soils and aquifer materials will be removed from the excavation area. The soils will be removed down to the gray clay confining layer that separates the perched ground water flow zone from the underlying ground water flow zone. A field screening mechanism to be

implemented during removal for determining the absence or presence of soil impacts will be identified through the implementation of a sampling and analysis plan appended to the CMI Work Plan.

2.02 COMMON FILL

Common fill soils shall consist of mineral soil substantially free from organic materials, loam, wood, trash, and other objectionable materials which may be compressible or which cannot be properly compacted, and meet the requirements for classification as "clean" as specified herein. Common fill soils shall not contain stones larger than two (2) inches in largest diameter and shall be classified according to the Unified Soil Classification System (USCS) as SM, SC, ML or CL. Common fill soils shall have a maximum plasticity index of 40. Common fill soils shall not contain granite blocks, broken concrete, masonry, rubble, or other similar materials. It shall have physical properties such that it can readily spread and be compacted during filling. Snow, ice, and frozen soil shall not be permitted.

2.03 TOPSOIL

Topsoil shall consist of loose, friable, and loamy soil material (loam, sandy loam, silty loam, sandy clay loam, clay loam) and shall be free of debris, trash, stumps, rocks, roots, and weeds, and meet the requirements for classification as "clean" as specified herein. Topsoil shall be able to support healthy vegetation and shall not contain substances which may be toxic to humans or plants. The fraction of particles passing through the 10-mesh sieve shall not contain more than 40 percent clay. Organic matter content shall be greater than 3 percent by weight, and pH shall be within the range 6.0 and 7.5. Lime shall be added appropriately if the pH is less than 6.0, in accordance with soil tests and as directed by the ENGINEER. Soluble salts shall not exceed 500 parts per million (ppm).

PART 3 - EXECUTION

3.01 GENERAL

A. Prior to earthwork activities, the Site shall be prepared in accordance with Section 02110 – SITE CLEARING.

B. In accordance with Section 02290 – EROSION AND SEDIMENT CONTROL, the CONTRACTOR shall provide erosion control measures to prevent erosion or displacement of soils and discharge of sediment-laden runoff or airborne dust to adjacent properties, walkways, or water bodies. Dust control during all aspects of the project shall be conducted regularly by the CONTRACTOR.

C. All excavations shall be cut accurately within the precise lines and limits shown on the Drawings or otherwise as directed by the ENGINEER. All roots, stumps, rock and foreign matter in the sides and bottom of excavations shall be removed. Excavations and filling shall conform to the slope, grade, and shape of the sections and details shown. Care shall be taken not to excavate below the grades indicated, unless otherwise approved by the ENGINEER. Excessive excavation shall be backfilled to grade with suitable fill material (e.g., common fill) as directed by the ENGINEER with no additional cost to the OWNER.

D. On-site structures and utilities shall be protected from damage caused by settlement, lateral movement, undermining, wash-out and other hazards created by the earthwork operations or delivery of soil materials.

E. If the moisture content of any fill material is outside the accepted range to be placed into the excavation, the soil shall be wetted or dried, as appropriate.

1. Fill material that is too wet to permit compaction shall be removed and stockpiled, or spread and allowed to dry. Drying may be assessed by disking, harrowing, addition of existing dry soil, or pulverizing until moisture content is reduced to a satisfactory level.

2. Fill material that is too dry shall be wetted uniformly so as to prevent free water appearing on the surface during or subsequent to compaction operations.

3. Any delays in progress due to the necessary wetting or drying of soil are the responsibility of the CONTRACTOR.

F. Soils placed in fill areas shall be graded to smooth true lines, strictly conforming to the grades approved by the ENGINEER.

G. Fill materials shall be placed in such a manner as to facilitate drainage at all times. Ponding of surface-water runoff shall not be permitted.

H. If compaction indicates that any portion of the Work does not meet the specified requirements, then the CONTRACTOR shall remove that section, replace and re-compact at no additional cost to the OWNER. Determinations of the extent of removal and the acceptability of the in-place fill materials shall be made by the ENGINEER.

I. If significant precipitation causes wet conditions, placement and compaction activities shall be terminated until the conditions have dried sufficiently to continue according to the ENGINEER.

J. Equipment or vehicles shall not be allowed to travel in a single track or form ruts. Any ruts or irregularities formed shall be scarified and re-compacted and revegetated by the CONTRACTOR at its expense as required and directed by the ENGINEER.

K. Prior to placing fill materials, the existing soils shall be proof-rolled to achieve a compact, uniform grade, and the surface shall be free of stones, roots, or other debris.

L. Inspection

1. Prior to implementing any of the Work in this Section, the CONTRACTOR shall carefully inspect the installed Work of all other Sections and verify that all Work is complete to the point where the Work of this Section may properly commence without adverse impact.

2. If the CONTRACTOR has any concerns regarding the installed Work of other Sections, CONTRACTOR shall notify the ENGINEER in writing. Failure to notify the ENGINEER prior to conducting Work within this or other Sections will be construed as CONTRACTOR's acceptance of the related Work of all other applied Sections.

M. The CONTRACTOR shall protect on-going and completed work from precipitation, excessive heat, freezing, and other elements to avoid compromising the integrity of prior Work. Prior Work affected by such conditions shall be repaired by the CONTRACTOR at no additional cost to the OWNER.

3.02 EXCAVATION

A. Excavation shall be made to the grades shown on the Drawings, or as directed by the ENGINEER. Care shall be exercised when stripping or removing soil so as to prevent over-excavation.

B. All excavation activities shall be conducted in compliance with all applicable Occupational Safety and Health Administration (OSHA) regulations. All excavations shall be conducted in a safe and stable manner. The slopes of the excavation shall be stable at all times.

C. Excavation and grading of materials shall be accomplished using properly sized earthmoving equipment. The equipment will operate so as to eliminate the potential for spreading contamination onto uncontaminated areas or surfaces.

D. If unsuitable materials are uncovered during excavation (pipes, manholes, structures, rocks, rubbish, etc.), it shall be stockpiled and removed from the Work area, and managed as directed by the ENGINEER.

E. The excavated material will be managed in accordance with the requirements in the Soil Management Plan (SMP), including stockpiling and sampling excavated soil, and disposition of the excavated soil in an off-site landfill or soil recycling facility that fails to meet the soil cleanup standards in the SMP.

3.03 SOIL PLACEMENT

A. CONTRACTOR shall provide and use only approved common fill or topsoil. Common fill material shall conform to this Specification, and shall be consistently compacted to the required density specified in Part 3.04 of this Section.

B. Final grade shall be placed to the contours and elevations as directed by the ENGINEER.

C. A geotextile fabric shall be placed at the base of the excavation, or bottom of fill, to demarcate the imported common fill from the underling native soil.

D. Common Fill

1. Common Fill material shall meet the requirements of Part 2.02 of this Section.

2. Common Fill shall be placed in a maximum compacted lift of 9 inches. Compaction shall be accomplished by standard construction equipment, or as otherwise approved by the ENGINEER.

3. Common Fill soil shall be compacted to 90 percent of the maximum dry density obtainable as determined by ASTM D-1557. The soil shall be compacted within a range of 1 percent below to 3 percent above the optimum moisture content as determined by ASTM D-1557, or as otherwise approved by the ENGINEER.

4. A maximum 5 percent of all field moisture content test results are permitted outside the specified range. The outliers are, however, not permitted to be concentrated in one lift or one area, and no moisture content shall be less than 2 percent or more than 4 percent of the optimum moisture content. The aerial extent is at the discretion of the ENGINEER.

5. A maximum 5 percent of all field dry density test results are permitted outside the specified range. The outliers are, however, not permitted to be concentrated in one lift or one area, and no dry density less than 87 percent as determined by ASTM D-1557 is permitted. The aerial extent is at the discretion of the ENGINEER.

6. If the criteria set forth in (4) and (5) of this Part have been exceeded, the CONTRACTOR shall remove the failing Common Fill and replace, compact and grade new, acceptable Common Fill at no cost to the OWNER.

E. Topsoil

1. Topsoil shall meet the requirements of Part 2.03 of this Section. Soil mixing is permitted to achieve the desired characteristics. Soil mixing shall be conducted prior to placing the material, and the mixed material shall be tested in accordance with this Section.

2. All ground areas disturbed by construction during this project and not built over, paved or otherwise surfaced shall be covered with topsoil.

3. Prior to placing topsoil, vegetation shall be removed from the area and the ground surface cleared of all other materials that would hinder proper grading, tillage or subsequent maintenance operations.

4. Previously constructed grades shall be repaired, if necessary, so that the areas to be covered with topsoil conform to the grades indicated on the Drawings upon completion of topsoil placement.

5. Subsequent to grading, the areas to be covered with topsoil shall be thoroughly scarified by approved means to a depth of at least three (3) inches for bonding of topsoil with the subsoil. The Work shall be performed only during periods when beneficial results are likely to be obtained; i.e. when conditions are such, by reason of drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the Work will be stopped by the ENGINEER and shall be resumed only when directed. Undulations or irregularities in the surface that would interfere with further construction operations or maintenance shall be leveled before the next specified operation.

6. The topsoil layer shall be uniformly distributed on the designated areas and evenly spread to a minimum loose thickness of six (6) inches. The spreading shall be performed in such manner that planting can proceed with little additional soil preparation or tillage. The surface resulting from placing topsoil shall meet the final grades as indicated on the Drawings. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to proper grading or the proposed planting.

3.04 EXCESS MATERIALS

A. All general waste or debris shall be containerized on-Site and periodically disposed off-Site in accordance with these Specifications. Land clearing debris shall be stockpiled on-Site for future reuse and/or disposal.

B. Suitable materials, as determined by tests discussed in these Specifications, shall be classified and stockpiled in approved areas for immediate or future use.

C. Stockpiles shall be graded to drain; no surface-water ponding is permitted on the stockpiles. Stockpiles shall be covered with plastic sheeting or other material to preserve the soil integrity and prevent erosion. Proper erosion controls; i.e., silt fence or filter sock, shall be installed at the perimeter of the stockpile.

D. Stockpiles that are not used for more than 14 days shall be covered as discussed in Paragraph 3.05 C, or be temporarily vegetated in accordance with these Specifications.

E. No materials shall be removed from the Site, except as specified or approved by the ENGINEER.

3.05 GRADING

A. Uneven areas and low spots which may develop in the soil placement operations shall be eliminated via minor excavations or placement of appropriate fill materials. Levels, profiles and contours of the final site configuration shall be maintained as established on the Drawings.

B. The areas to be filled shall be uniformly graded to within the limits of grading under this Section. A smooth finished surface shall result within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades to the satisfaction of the ENGINEER.

C. Constructed slopes shall be blended into existing undisturbed areas gradually in order to provide neat, clean transition zones. Feathering of constructed slopes into existing grades shall be accomplished to promote natural drainage and to eliminate possible surface-water ponding.

D. The right is reserved by the ENGINEER to make minor adjustments or revisions in lines or grades if found necessary as the Work progresses, due to discrepancies on the Drawings or in order to obtain satisfactory construction. Any suspected discrepancies shall be reported to the ENGINEER as soon as detected.

3.06 LOADING, HAULING AND PLACEMENT

A. The CONTRACTOR shall be responsible for loading and transporting the impacted soil to the disposal facility. Loading and transportation of impacted soil shall be conducted in a manner as to eliminate all dust and the spillage of loose materials that may be tracked off-site on the transport vehicle tires.

B. No vehicle shall leave the site with impacted soil unless the material is tightly covered/tarped so that no material/dust is able to blow off and/or drop off.

C. The CONTRACTOR shall bear full responsibility for any required clean-up of all spilled materials during loading and transportation. All clean-up and remediation activities associated with spilled materials shall be performed at no additional cost to the OWNER.

D. No queuing of trucks shall be permitted on any public roadways off-site. Any queuing of trucks that occurs shall be on-site.

E. The CONTRACTOR shall provide sufficient trucks on a daily basis to assure meeting the Construction Schedule. Additional trucks shall be provided, as required, to meet the schedule if delays occur. Transportation shall occur only during normal working hours, between Monday and Friday inclusive.

3.07 CRITERIA AND TOLERANCES

A. Compaction and moisture content criteria and tolerances are discussed in Part 3.04 of this Section.

B. In recognition of the moisture-density relationship of soils, the ENGINEER may direct that the compaction and moisture content tolerances be modified if required by variabilities in the soils. This decision, if required, will be based on the ENGINEER's interpretation of the laboratory analyses for each soil.

C. No additional payment will be made for quantities of soils placed in excess of that amount required to achieve the minimum specified thickness.

3.08 FIELD QUALITY CONTROL

A. The CONTRACTOR shall test the in-place density and moisture content of the common fill soil in accordance with ASTM D-6938 and these Specifications. The testing shall be conducted at a frequency of not less than five (5) tests per acre per lift for common fill soil and five (5) tests per acre per lift for the first lift and final two lifts of impacted soil. Every 25th nuclear density test shall be verified in accordance with ASTM D-l556 and ASTM D-2216. All test locations shall be surveyed, recorded, and provided on the "As-Built" Drawings.

B. The CONTRACTOR shall provide field control; i.e., grade stakes, to determine layer thickness. The ENGINEER will perform verifying thickness measurements in the field in accordance with quality assurance activities.

C. The CONTRACTOR shall provide access and repair any damage to subgrade caused by all performed tests, and cooperate in other ways necessary to permit the ENGINEER to conduct testing when and where desired and as expeditiously as possible.

D. Fill material shall not be placed over a lift which has not been accepted by the ENGINEER.

E. All placement operations shall comply with all requirements of these Specifications.

END OF SECTION

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02232
GRANULAR MATERIALS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work covered by this Section consists of furnishing all labor, materials, tools, equipment and incidentals necessary for obtaining and placing the granular components as indicated on the Drawings and specified herein.

1.02 DEFINITIONS

A. "Dense-Graded Aggregate (DGA)" includes all stone utilized for concrete cover subbase, if necessary.

B. "Rounded or Sub-Rounded Gravel" includes all gravel placed around the SSV and utility piping.

1.03 REFERENCES

A. AASHTO T 27 Sieve Analysis of Fine and Coarse Aggregates

B. ASTM C-136 Standard Method for Particle-Size Analysis of Aggregates

C. 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control

D. Standard Specifications for Road and Bridge Construction, latest edition, MDOT.

1.04 QUALITY ASSURANCE

All materials, procedures, operations, and methods shall be in strict conformance with the Drawings and these Specifications, and shall be subject to strict quality control monitoring as detailed herein and in the Construction Quality Assurance Plan (CQAP). The placed granular materials shall conform exactly to the Drawings and these Specifications, except as otherwise authorized in writing by the ENGINEER.

1.05 SUBMITTALS

A. The CONTRACTOR shall submit the location of all borrow pits to the ENGINEER no less than two weeks prior to the anticipated placement of any granular materials.

B. The CONTRACTOR shall submit a 50-pound sample from each of the suppliers proposed to furnish the required quantity of granular materials.

The samples shall be submitted to the ENGINEER no less than two weeks prior to the anticipated placement of any granular materials.

C. Angular and Rounded or Sub-Rounded Gravel

1. The CONTRACTOR shall submit the results of the particle-size analysis for Angular and Rounded or Sub-Rounded Gravel conducted in accordance with ASTM C-136 for every 1,000 cubic yards of materials imported to the site.

2. The test results shall verify that the material meets the technical requirements of these Specifications. The test results shall be submitted to the ENGINEER no less than one week prior to the anticipated placement of granular materials.

D. Densely Graded Aggregate (DGA)

1. The CONTRACTOR shall submit the results of the particle-size analysis for densely graded aggregate conducted in accordance with ASTM C-136 for every five (5) tons of stone installed or a minimum of one test per installation location where less than five (5) tons are installed.

2. The test results shall verify that the material meets the technical requirements of these Specifications. The test results shall be submitted to the ENGINEER no less than one week prior to the anticipated placement of granular materials.

1.06 DELIVERY

The CONTRACTOR shall notify the ENGINEER one (1) week in advance of delivery of all granular materials. The CONTRACTOR shall stockpile granular materials only at a location approved by the ENGINEER.

PART 2 - MATERIALS

2.01 GRANULAR MATERIALS

A. Dense-Graded Aggregate

1. Aggregate shall consist of hard, strong, durable particles that are free of any materials, roots, trees, stumps, concrete, construction debris, other organic matter, and deleterious materials.

2. Aggregate shall be placed in the lifts not exceeding 6 inches in thickness and compacted to 95 percent of maximum dry density.

3. The aggregate shall meet the gradation requirements set forth by the Maryland Department of Transportation Standard Specifications for dense-graded aggregate as given below and as determined by AASHTO T 27.

Sieve Size	Percent Passing
2-inch	100
1 ½-inch	95-100
¾-inch	70-92
3/8-inch	50-70
No. 4	35-55
No. 30	12-25
No. 200	0-5

B. Rounded or Sub-Rounded Gravel

1. Gravel shall consist of hard, strong, durable, sub-rounded to well-rounded particles that are free of any materials, roots, trees, stumps, concrete, construction debris, other organic matter, and deleterious materials. The gravel shall be a washed material, clean of fines.

2. The gravel shall meet the gradation requirements set forth by the Maryland Department of Transportation Standard Specifications for Construction and Materials for AASHTO M 43, No. 57 aggregate as given below and as determined by ASTM C-136.

Sieve Size	Percent Passing
1 ½-inch	100
1-inch	95-100
¾-inch	---
½-inch	25-60
3/8-inch	---
No. 4	0-10

No. 8	0-5

PART 3 - EXECUTION

3.01 INSPECTION

A. The CONTRACTOR shall verify that finished grades, slopes, and elevations are level with the existing grades and conform to the specified requirements. Misgraded Work shall be corrected at no additional cost to the OWNER. CONTRACTOR shall notify the ENGINEER immediately if a specified grade, slope or elevation appears inconsistent with the others specified.

B. At the beginning of each day's Work, the ENGINEER will inspect the previously placed granular materials and institute whatever corrective action, if any, that the ENGINEER deems appropriate at no additional cost to the OWNER. This may include, but is not limited to, the removal of unsuitable granular materials.

3.02 PLACEMENT OF GRANULAR MATERIALS

A. Granular materials shall be placed, not dumped, to the limits and grades shown on the Drawings.

B. The dense-graded aggregate shall be placed in lifts not exceeding six (6) inches in thickness. Compaction shall be accomplished with a minimum of four (4) passes by designated compaction equipment with a minimum weight of 40,000 pounds, or as otherwise approved by the ENGINEER. The CONTRACTOR shall proof roll the dense-graded aggregate with a loaded tandem truck. If the dense-graded aggregate appears soft or spongy, or pumping occurs, the CONTRACTOR shall re-compact that section or remove that section at no additional cost to the OWNER. Determination of the extent of removal and the acceptability of the in-place fill materials shall be made by the ENGINEER.

3.03 CRITERIA AND TOLERANCES

A. The thickness of the granular materials shall meet the minimum thickness as stated in each application.

B. No additional payment will be made for quantities of materials placed in excess of that amount required to achieve the minimum specified thickness.

3.04 FIELD QUALITY CONTROL

A. The CONTRACTOR shall perform thickness measurements in the field to demonstrate to the ENGINEER compliance with the Drawings and Specifications. The ENGINEER may require the CONTRACTOR to perform additional thickness measurements to demonstrate compliance with the Drawings and Specifications.

B. The CONTRACTOR shall survey the graded areas to demonstrate to the ENGINEER compliance with the Drawings and Specifications. The ENGINEER may require the CONTRACTOR to perform additional surveying to demonstrate compliance with the Drawings and Specifications.

END OF SECTION

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02250
TRANSPORTATION AND DISPOSAL OF MATERIALS

PART 1 - GENERAL

1.01 DESCRIPTION

The CONTRACTOR shall furnish all labor, materials, tools and equipment required to transport all debris, liquids, and other waste materials not otherwise designated for disposal on-Site for recycling or disposal as specified in these Contract Documents.

1.02 REGULATORY REQUIREMENTS

A. The debris, liquids, and other waste materials removed during the Work and designated for off-Site disposal shall be cleaned and properly decontaminated (or contained in the case of contaminated soils and liquids) sufficient for transportation in accordance with these Specifications and all federal, state, and local regulations.

B. All debris, liquids, and other waste materials designated for off-Site disposal shall be disposed at a waste disposal facility approved by the ENGINEER in accordance with all federal, state, and local regulations.

C. The CONTRACTOR shall comply with all applicable regulatory requirements and all federal, state, or local laws, codes, and ordinances which govern the transportation of equipment and disposal of material to be removed from the Site.

D. The CONTRACTOR shall obtain any and all permits required for transport and disposal and comply with all applicable requirements.

1.03 TRANSPORTATION

A. The CONTRACTOR shall be responsible for transporting debris, liquids, and other waste materials to the appropriate off-Site facility for disposal.

B. The CONTRACTOR shall be responsible for all sampling and testing required by the off-Site disposal facility. At a minimum, the analytical testing shall include Resource Conservation and Recovery Act (RCRA) characteristics (toxicity, corrosivity, reactivity and flammability), poly chlorinated biphenyls (PCBs) and organic and inorganic parameters required by the disposal facility in accordance with United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). The test results (lab reports and electronic deliverables) shall be provided to the ENGINEER.

C. The CONTRACTOR shall provide all necessary traffic controls at the ingress and egress location such as flagmen, during trucking operations, or as otherwise directed by the ENGINEER.

D. No queuing of trucks shall be permitted on public roads. Any queuing of trucks that occurs on-Site shall not interfere with daily traffic.

1.04 SUBMITTALS

A. In accordance with Section 01300 – SUBMITTALS.

B. The CONTRACTOR shall submit written documentation certifying that the disposal facility is in compliance with all regulations and permits, and is willing to accept the material. A copy of the most recent inspection report shall be submitted to the ENGINEER verifying that the facilities have no violations or other environmental conditions that affect the satisfactory operation of the facility.

C. The CONTRACTOR shall submit copies of results of any tests performed at the disposal facility by the disposal facility prior to waste acceptance. The CONTRACTOR shall be responsible for performing any tests required by the receiving facility for the disposal of materials.

D. The CONTRACTOR shall prepare and submit to the ENGINEER information regarding transporting materials from the Site, including type of trucks and/or trailers, method of transportation, the transport route to the facility, the anticipated number of trips, and the proposed types and locations of necessary traffic control devices to be used by the CONTRACTOR. The CONTRACTOR shall also list all federal, state, and local regulations that must be complied with and all permits that must be obtained.

E. The CONTRACTOR shall not commence with the removal of debris, liquids, and other waste materials from the Site until the ENGINEER has approved the submitted information.

F. The CONTRACTOR shall submit copies of weigh tickets or other receipts provided by the disposal facility to the ENGINEER as evidence of the arrival and disposal of the material at the disposal site, including any salvaging, recycling, or recovery. The documentation submitted to the ENGINEER shall, at a minimum, identify the origin of the material, the quantity of the material (tons, cubic yards, units, etc.), the identification of the transport vehicle, the type of material, and the date the material was disposed at the facility.

1.05 DISPOSAL FACILITIES

A. The ENGINEER reserves the right to direct the CONTRACTOR to dispose material at a facility identified by the ENGINEER.

B. Unless directed by the ENGINEER to dispose material at a particular facility, the CONTRACTOR shall be responsible for locating disposal facilities; e.g., solid waste disposal facility, hazardous waste disposal facility, etc., which shall accept all materials removed from the Site to be disposed, including materials generated from vehicle and equipment decontamination or other activities performed within the areas of Work, as applicable.

C. The disposal facilities shall be approved by the ENGINEER. The disposal facility shall be in compliance with all current federal and state regulations governing construction and operation of an appropriate waste disposal facility.

1.06 ALTERNATE DISPOSAL FACILITY

A. In the event that the identified and approved facilities cease to accept the stated materials or the facility ceases operations, it is the CONTRACTOR's responsibility to locate an alternate approved and permitted facility for accepting materials. The CONTRACTOR is responsible for making the necessary arrangements to utilize the facility and the alternate facility must be approved in writing by the ENGINEER in the same manner and with the same requirements as the original facility before the debris, liquids, and other waste materials are removed from the Site.

PART 2 - PRODUCTS

(not used)

PART 3 - EXECUTION

3.01 GENERAL

A. No vehicle shall leave the Site unless it is in a clean condition, free of loose dirt or loose material on tailgates, axles, wheels, etc.

B. No vehicle shall leave the Site with debris, liquids, and other waste materials, unless the materials are secure and tightly covered/tarped or contained so that no material, dust, or water is able to drop off, blow off, or leak out. Trucks shall be lined at the discretion of the ENGINEER.

C. Loading and transportation of debris, liquids, and other waste materials shall be conducted in a manner as to eliminate all dust.

D. All personnel, equipment, and trucks shall enter and exit the Site from State Route 2. Prior to exiting the Site all decontamination requirements of these Specifications and the Site Health and Safety Plan shall be met.

E. In the event that the materials being transported are dropped or spilled from the truck during transportation, the CONTRACTOR shall take the following steps.

1. If contents are spilled on-Site, the CONTRACTOR shall immediately notify the ENGINEER. The CONTRACTOR is responsible for immediate removal of the waste materials and cleaning the area to the satisfaction of the ENGINEER.

2. If contents are spilled off-Site, the CONTRACTOR shall immediately notify the ENGINEER and the appropriate authorities; i.e., local fire and police departments. The appropriate clean up activities shall be coordinated without delay with these authorities.

3. The CONTRACTOR shall bear full responsibility for any required clean up of all spilled material. All clean up and remediation activities associated with spilled materials shall be performed at no additional cost to the OWNER.

F. The CONTRACTOR shall be responsible for managing, handling, conditioning, transporting, and disposing of all material that is designated to be removed from the Site.

G. No material shall exit the Site unless it has been analyzed and documented (e.g., manifest), as necessary.

H. No material, except dewatering and decontamination liquids, shall exit the Site that fails the Paint Filter Liquid Test, EPA Method 9095A.

3.02 TRANSPORTATION LOG

The CONTRACTOR shall maintain at the Site a log of vehicles leaving the Site with waste materials. The log shall indicate the vehicle identification number, date and time of departure, contents of the truck, and approximate volume or quantity of material carried.

END OF SECTION

02511
ASPHALT PAVING

PART 1 - GENERAL

1.01 DESCRIPTION

The Work covered by this Section consists of furnishing all materials, labor, equipment and services necessary for the installation of asphalt paving. The component thicknesses comprising the pavement section, including gravel, base and wearing courses, shall be designed based on the intended end use of the asphalt.

1.02 REFERENCES

A. ASTM C-136 Standard Method for Particle-Size Analysis of Aggregates

B. ASTM D-946 Asphalt Cement for Use in Pavement Construction

C. ASTM D-1556 Test for Density of Soil-in-Place by the Sand-Cone Method

D. ASTM D-1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 Pound Rammer and 18-Inch Drop

E. Maryland State Highway Administration Standard Specifications for Construction and Materials, July 2008.

F. Maryland Asphalt Association, Inc. – Hot Mix Asphalt Pavement Deign Guide

F. The Asphalt Institute – Manual MS-4 – The Asphalt Handbook

G. The Asphalt Institute – Manual MS-13 – Asphalt Surface Treatments and Asphalt Penetration Macadam

H. VTM-22 Field Determination of Percent Density of Compacted Asphalt Concrete Mixtures (TL-60)

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed hot-mix asphalt paving similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance.

B. Manufacturer Qualifications: Engage a firm experienced in manufacturing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.

C. Testing Agency Qualifications: Demonstrate to ENGINEER's satisfaction, based on criteria conforming to ASTM D-3666, that the independent testing agency has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

Firm shall be a registered and approved paving mix manufacturer with authorities having jurisdiction.

D. Regulatory Requirements: Conform to applicable local regulations for asphalt paving work on private property.

E. Asphalt-Paving Publication: Comply with AI's "The Asphalt Handbook" and The Maryland Asphalt Association's "Hot Mix Asphalt Pavement Design Guide," except where more stringent requirements are indicated.

1.04 SUBMITTALS

A. Submittals shall be in conformance with Section 01300 – SUBMITTALS.

B. The CONTRACTOR shall submit the material certificates attesting that each material item complies with or exceeds the specification requirements.

C. The CONTRACTOR shall submit batch tickets for each load of asphalt concrete delivered to the project site.

D. The CONTRACTOR shall submit technical data and tested physical and performance properties for each product specified.

E. The CONTRACTOR shall submit documentation for the asphalt pavement, including but not limited to mix type, mix design, tack coat, and sealer a minimum of three weeks prior to the commencement of Work.

F. The CONTRACTOR shall submit certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

1.05 PROJECT SPECIFICATIONS

The CONTRACTOR shall perform all asphalt paving Work, including furnishing materials, the placement of asphalt/concrete, joints, compaction, testing, quality assurance/quality control, inspection, surface preparation, and other associated Work, in accordance with the Maryland State Highway Administration Standard Specifications for Construction and Materials.

PART 2 - PRODUCTS

2.01 MATERIALS

All products and materials for asphalt paving shall conform to the Maryland State Highway Administration Standard Specifications for Construction and Materials.

PART 3 - EXECUTION

3.01 INSTALLATION

Inspection, preparation, repairs, patching, resurfacing, hot mix asphalt placement, joints, compaction, and field quality control shall conform to the Maryland State Highway Administration Standard Specifications for Construction and Materials.

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02711
GEOTEXTILE

PART 1 – GENERAL

1.01 DESCRIPTION

A. The CONTRACTOR shall furnish all labor, materials, tools, supervision, transportation, and installation equipment necessary for the manufacture, storage, delivery, installation, and testing of the geotextile portions of this project, including the use as a marker fabric and as shown on the Drawings.

B. The CONTRACTOR shall perform the installation of the geotextiles in conjunction with all necessary construction, as depicted on the Drawings.

1.02 REFERENCES

A.	ASTM D-3776	Mass Per Unit Area (Weight) of Fabric
B.	ASTM D-4491	Water Permeability of Geotextiles by the Permittivity Method
C.	ASTM D-4533	Trapezoidal Tearing Strength of Geotextiles
D.	ASTM D-4595	Tensile Properties of Geotextiles by the Wide-Width Strip Method
E.	ASTM D-4632	Grab Breaking Load and Elongation of Geotextiles
F.	ASTM D-4751	Determining Apparent Opening Size of a Geotextile
G.	ASTM D-4884	Strength of Sewn or Bonded Seams of Geotextiles
H.	ASTM D-5261	Measuring Mass Per Unit Area of Geotextiles
I.	ASTM D-6241	Static Puncture Strength of Geotextiles and Geotextile-Related Products

1.03 QUALITY ASSURANCE

A. All materials, procedures, operations, and methods shall be in strict conformance with the Drawings and Specifications and shall be subject to strict quality control monitoring as detailed herein and in the Construction Quality Assurance (CQA) Plan. The installed geotextiles shall conform exactly to the Drawings and Specifications, except as otherwise authorized in writing by the ENGINEER.

B. The CONTRACTOR shall comprehend and anticipate quality assurance activities and account for these activities in the installation schedule.

1.04 SUBMITTALS

A. Prior to shipment of any geotextile materials, the CONTRACTOR shall submit the following information on the geotextile production to the ENGINEER:

1. Roll numbers and identification numbers.

2. Quality control certificates that provide reference to the roll numbers and identification numbers, sampling procedures, test methods and test results, and other items such as:

a. Name of manufacturer
b. Chemical composition
c. Product identification
d. Statement of compliance
e. Signature of authorization

All certificates shall be signed by a representative of the manufacturer.

3. Geotextile quality control tests include:

Test	Procedure
Permittivity	ASTM D4491
Flow Rate	ASTM D4491
Permeability	ASTM D4491
Fabric Weight	ASTM D5261 or D3776
Grab Tensile Strength	ASTM D4632
Grab Elongation	ASTM D4632
Apparent Opening Size	ASTM D4751
Puncture Strength	ASTM D6241
Trapezoidal Tear Strength	ASTM D4533
Tensile Strength	ASTM D4595
Seam Strength	ASTM D4884

B. Unless otherwise specified, the quality control tests shall be conducted at a frequency of one per lot or one per each 50,000 square feet. One lot is defined as a group of consecutively numbered rolls or panels from the same manufacturing line.

C. If a sample fails to meet the quality control requirements, the manufacturer shall test each roll manufactured from the same resin batch or at the same time as the failing roll. Testing shall be at the manufacturer's expense and shall continue until a pattern of acceptable test results is established.

D. The geotextile manufacturer shall replace any material that is rejected because it does not comply with these Specifications.

E. Upon delivery to the Site, the CONTRACTOR and the ENGINEER shall inspect the physical condition of the material. If the protective wrapping is damaged, or if damage to the roll is suspected by the ENGINEER, the material will be rejected and shall be replaced by the CONTRACTOR at no additional expense to the OWNER.

PART 2 - PRODUCTS

2.01 GEOTEXTILE MATERIAL

A. General Requirements

1. The geotextile utilized in the vegetative soil cover as the visual identification layer shall be a high visibility non-woven geotextile, such as Mirafi Orange Delineation Geotextile, or approved equivalent. The product utilized shall meet or exceed the criteria specified in Table 02711-1.

2. Geotextile utilized for utility and SSV system ground penetration, shall meet or exceed the criteria specified in Table 02711-2.

2. Unless otherwise noted on the Drawings, geotextile suppliers shall furnish materials whose "Minimum Average Roll Values", as defined by the Federal Highway Administration (FHA), meet or exceed the criteria specified in Tables 02711-1 and 02711-2. The geotextiles provided by the supplier shall meet or exceed the property value specified and shall be stock products; i.e., unless authorized, the supplier shall not furnish products specially, manufactured to meet the specifications of this project.

3. The supplier shall furnish test results for the design criteria, as well as written certification that the materials meet the specifications in accordance with Section 01300 – SUBMITTALS and these Contract Documents.

4. The geotextile material shall also perform the following:

a. Retain its structure during handling, placement and long-term service;

b. The material shall be capable of withstanding direct exposure to sunlight for 30 days with no measurable deterioration; and,

c. The material shall be chemically compatible with the materials that will be in contact with it.

B. Labeling

1. The geotextile shall be supplied wrapped in relatively impermeable and opaque protective covers.

2. The geotextile shall be marked or tagged with the following information:

a. Manufacturer's name;
b. Product identification;
c. Lot number;
d. Roll number; and,
e. Roll dimensions.

3. Additionally, if any special placement is required, it shall be so marked on the textile material; e.g., "This Side Up", or "This Side Against Soil to be Retained".

2.02 TRANSPORTATION, HANDLING, AND STORAGE

A. Transportation of the CONTRACTOR-supplied geotextile materials is the responsibility of the CONTRACTOR. The CONTRACTOR shall be liable for all damage to the materials incurred prior to and during transportation to the Site.

B. Handling, storage and care of the CONTRACTOR-supplied geotextile materials prior to and following installation at the Site is the responsibility of the CONTRACTOR. The CONTRACTOR shall provide adequate storage space at the Site. The CONTRACTOR shall be liable for all damage to the materials incurred during transportation, storage and installation, and prior to final acceptance of the Work by the ENGINEER and Regulators.

C. During shipment and storage, geotextiles shall be protected from ultraviolet light exposure, precipitation, or other inundation, mud, dirt, dust, punctures, cutting or any other damaging or deleterious conditions.

Any additional storage procedures required by the geotextile manufacturer shall be the CONTRACTOR's responsibility.

PART 3 - EXECUTION

3.01 HANDLING AND PLACEMENT

A. The CONTRACTOR shall handle all geotextiles in such a manner as to ensure that they are not damaged in any way.

B. In the presence of wind, all geotextiles shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during placement and shall remain until replaced with cover material.

C. Inspection:

1. Prior to implementing any of the Work in this Section, the installed Work of all other Sections shall be complete to the point where the Work of this Section may properly commence without adverse impact.

2. If the CONTRACTOR has any concerns regarding the installed work of other Sections, the CONTRACTOR shall notify the ENGINEER in writing prior to the start of the Work of this Section. Failure to inform the ENGINEER in writing will be construed as the CONTRACTOR's acceptance of the related Work of all other Sections.

D. During placement, care shall be taken not to entrap in the geotextile stones, excessive dust, or moisture that could cause damage.

E. An examination of the geotextile over the entire surface, after installation, will be conducted by the ENGINEER to ensure that no potentially harmful foreign objects, such as needles, are present. Any foreign objects so encountered shall be removed or the geotextile shall be replaced.

F. The geotextile shall only be cut using a geotextile cutter or other methods approved by the ENGINEER.

G. After unwrapping the geotextile from its opaque wrapping, the geotextile shall not be left exposed for longer than 14 days, unless approved by the ENGINEER.

3.02 SEAMS AND OVERLAPS

A. Geotextiles shall be overlapped a minimum of six (6) inches.

B. The CONTRACTOR shall pay particular attention at seams to ensure that no foreign material is inadvertently inserted beneath a geotextile.

3.03 REPAIR

A. Any holes or tears in the geotextile shall be repaired by one of the following methods:

1. Liestering a patch made from the same geotextile over the affected area, with a minimum of one (1) foot overlap in all directions.

2. Sewing a patch made from the same geotextile over the affected area with a minimum of six (6) inch overlap in all directions.

3.04 PLACEMENT OF OVERLYING MATERIALS

A. The CONTRACTOR shall place all overlying materials located on top of the geotextile in such a manner as to ensure:

1. No damage of the geotextile or underlying layers;

2. Minimal slippage between the geotextile and the underlying layers; and,

3. No excess tensile stresses in the geotextile.

B. On the sideslopes, soil placement shall proceed from the bottom of the slope upward, unless otherwise approved by the ENGINEER.

C. Equipment shall not be driven directly on the geotextile. Unless otherwise specified by the ENGINEER, all operational equipment accessing areas where geotextile is placed shall adhere to the following soil thicknesses:

Maximum Allowable Equipment Ground Pressure (psi)	**Soil Thickness Above Geosynthetic (feet)**
< 5	1.0
< 10	1.5
< 20	2.0
≥ 20	3.0

Table 02711-1
Required Property Values for Visual Identification Layer

Properties	Qualifier	Specified Value	Test Method
Polymer Composition	Minimum	95% weight polypropylene or polyester	----
Fabric Weight	Minimum	8 oz/sq yd	ASTM D-5261 or 3776
Puncture Strength	Minimum	630 lbs	ASTM D-6241
Grab Tensile Strength	Minimum	240 lbs	ASTM D-4632
Grab Tensile Elongation	Minimum	70 %	ASTM D-4632
Trapezoidal Tear Strength	Minimum	90 lbs	ASTM D-4533
Flow Rate	Minimum	95 gpm/sq ft	ASTM D-4491
Permittivity	Minimum	1.5 sec^{-1}	ASTM D-4491
Apparent Opening Size (A.O.S.)	Maximum	Sieve Size: 100	ASTM D-4751

Table 02711-2
Required Property Values for Non-Woven Geotextiles

Properties	Qualifier	Specified Value		Test Method
		MD	CD	
Polymer Composition	Minimum	95% weight polypropylene or polyester		----
Fabric Weight	Minimum	8 oz/sq yd		ASTM D-5261 or 3776
Trapezoidal Tear Strength	Minimum	80 lbs		ASTM D-4884
Grab Elongation	Minimum	50%		ASTM D-6496
Grab Tensile Strength	Minimum	200 lbs		ASTM D-4632
Flow Rate	Minimum	95 gpm/sq. ft.		ASTM D-4491
Permittivity	Minimum	1.1 sec^{-1}		ASTM D-4491
Apparent Opening Size (A.O.S.)	Maximum	Sieve Size: 70		ASTM D-4751

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02713
HDPE GEOMEMBRANE

PART 1 - GENERAL

1.01 DESCRIPTION

A. The CONTRACTOR shall furnish all labor, materials, tools, supervision, transportation, and installation equipment necessary for the manufacturing, storage, delivery, installation, and testing of the smooth and textured High Density Polyethylene (HDPE) geomembranes for the liner and cover system as herein specified.

B. The CONTRACTOR shall furnish and install smooth 30-mil HDPE geomembrane in conjunction with construction of all other components of the of the sub-slab soil vapor mitigation system.

C. The geomembrane shall be installed in the areas designated on the Drawings and in accordance with these Specifications.

1.02 REFERENCES

A.	ASTM D-570	Water Adsorption
B.	ASTM D-638,	Mod Tensile Properties of Plastics
C.	ASTM D-751	Coated Fabrics
D.	ASTM D-1004	Tear Resistance
E.	ASTM D-1204	Dimensional Stability
F.	ASTM D-1238	Melt Flow Index
G.	ASTMD-1505	Density
H.	ASTM D-1 603	Carbon Black Content
I.	ASTM D-3015	Carbon Black Dispension
J.	ASTM D-3083	Resistance to Soil Burial
K.	ASTM D-4354	Standard Practice for Sampling of Geosynthetics for Testing
L.	ASTM .D-6392-99	Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods
M.	ASTM D-4439	Standard Terminology for Geosynthetics

N. GRI - GC8 Determination of the Allowable Flow Rate of a Drainage Geocomposite

O. ASTM D-4759 Standard Practice for Determining the Specification Conformance of Geosynthetics

P. ASTM D-4833 Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products

Q. ASTM D-4873 Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls

R. ASTM D-5199 Measuring Nominal Thickness of Geotextiles and Geomembranes

S. ASTM D-5262 Evaluating the Unconfined Tension Creep Behavior of Geosynthetics

T. ASTM D-5321 Determining the Coefficient of Soil or Geosynthetic and Geosynthetic Friction by the Direct Shear Method

U. ASTM D-5322 Standard Practice for Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids

V. ASTM D-5496 Standard Practice for Field Immersion Testing of Geosynthetics

1.03 QUALIFICATIONS

A. The Geosynthetic Materials installer shall be trained and qualified to install both a smooth and a textured HDPE geomembrane system. The installer shall be approved and/or licensed by the manufacturer or the fabricator of the material and have a minimum of 3 years of experience in the installation of the specified geomembrane or similar. The Geomembrane Installer shall have installed at least 10 projects involving a total of 5,000,000 square feet of the specified type of geomembrane or similar during the last 3 years. A copy of the approval letter or license shall be submitted by the installer to the ENGINEER. The Geosynthetic Materials Installer shall provide the ENGINEER with the following written information:

1. Equipment and personnel to be utilized;

2. Daily anticipated installation rate;

3. Quality control manual for installation; and,

4. Samples of seams and certified test results.

B. The manufacturer shall be experienced in fabricating at least 10,000,000 ft^2 of similar geosynthetic materials. The personnel to perform the seaming operations under the supervision of the Geosynthetic Materials Installer shall be qualified by experience. The field crew foreman must have documented experience of successfully installing at least 5,000,000 ft^2 of landfill or comparable geosynthetic systems on a total of at least 10 different projects. He/she shall also have experience seaming HDPE geomembrane using the same method of seaming that will be used for this specific project. The field crew foreman shall provide direct supervision over less experienced seamers; no field seaming shall be performed without the foreman being present.

C. Seaming shall be performed under the direction of a Master Seamer (who may also be the Field Installation Supervisor or Crew Foreman) who has seamed a minimum of 3,000,000 ft^2 of geomembrane of the type specified or similar product, using the same type of seaming apparatus to be used in the current project. The Field Installation Supervisor and/or Master Seamer shall be present whenever seaming is performed.

1.04 QUALITY ASSURANCE

A. All materials, procedures, operations, and methods shall be in strict conformance with the Drawings and Specifications, and shall be subject to strict quality control monitoring as detailed herein, and in the CQA/QC Plan prepared for this project. The installed geomembrane system shall conform exactly to the Drawings and these Specifications, except as otherwise authorized in writing by the ENGINEER.

B. The CONTRACTOR shall comprehend and anticipate the CQA activities and account for these activities in the installation schedule.

1.05 SUBMITTALS

A. A minimum of two weeks prior to the anticipated placement of any HDPE geomembrane material, the CONTRACTOR shall submit the geomembrane panel diagram to the ENGINEER for approval.

B. A minimum of two weeks prior to the anticipated on-site delivery and placement of any HDPE geomembrane material, the CONTRACTOR shall submit the geomembrane manufacturer and installer warranties to the ENGINEER. The ENGINEER shall submit the warranties to the OWNER for review and approval.

C. Prior to shipment of any geomembrane materials, the CONTRACTOR shall submit the following information on the raw materials to the ENGINEER:

1. Origin and production date of the resin;

2. A copy of the quality control certificates issued by the resin supplier;

3. Reports of tests conducted by the manufacturer to verify that the quality of the HDPE geomembrane is in conformance with all requirements identified in this section; and,

4. Certification that no reclaimed polymer is added to the resin.

D. Prior to shipment of any HDPE geomembrane materials, the CONTRACTOR shall submit the following information on the HDPE geomembrane production to the ENGINEER:

1. Roll numbers and identification numbers;

2. Quality Control certificates that provide reference to the roll numbers, identification numbers, sampling procedures, test methods, and test results and other items, such as:

   a. Name of Manufacturer;
   b. Chemical Composition;
   c. Product Identification;
   d. Statement of Compliance; and,
   e. Signature of Authorization.

   All certificates shall he signed by a representative of the manufacturer.

3. HDPE geomembrane manufacturer quality control tests include:

Test	Procedure
Asperity Height	
Melt Flow Index	ASTM D-1238
Density	ASTM D-l505
Thickness	ASTM D-5199 or D-5994
Carbon Black Content	ASTM D-1603
Carbon Black Dispersion	ASTM D-5596
Tensile Properties	ASTM D-638
Test	Procedure
Puncture Resistance	FTMS 101, Method 2065 or ASTM D-4833, ASTMD-5514
Tear Resistance	ASTM D-1004, Die C
Dimensional Stability	ASTM D-1204
Direct Shear	ASTM D-5321

4. Unless otherwise specified, the quality control tests shall be conducted at the frequency of one per lot or one per each 100,000 square feet. One lot is defined as a group of consecutively-numbered rolls or panels from the

same manufacturing line. The direct shear tests shall be conducted to verify the performance of the materials three times prior to placement of any geosynthetics.

5. The HDPE geomembrane manufacturer shall replace any rolls that are rejected because they do not comply with these Specifications.

6. If a sample fails to meet the quality control requirements, the manufacturer shall test each roll manufactured from the same lot, or at the same time as the failing roll. Testing shall be at the manufacturer's expense and shall continue until a pattern of acceptable test results is established.

7. Immersion testing results on the actual geomembrane shall be conducted for this project. One immersion test shall be performed for each type of material and from each source of the material. The testing of the geomembrane shall be in accordance with ASTM D-5322-98 (D-5322-98 Standard Practice for Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids). After the immersion testing iscomplete, contractor shall test the sample source from the immersion test to confirm that it meets the ASTM standards for the tensile properties, puncture resistance, tear resistance, and chemical resistance.

E. Upon delivery to the site, the Geosynthetic Materials Installer and ENGINEER shall inspect the physical condition of each roll of material. If the protective wrapping is damaged, or if damage to the roll is suspected by the ENGINEER, the roll shall be separated from the lot for more detailed inspections. CQA conformance samples shall be taken in accordance with the CQA/QC Plan.

F. Throughout the HDPE geomembrane installation process, the Geosynthetic Materials Installer shall provide the ENGINEER with subbase acceptance certificates, signed by the installer, for each area to be covered by HDPE geomembrane.

G. Warranty: The HDPE geomembrane manufacturer and Geosynthetic Materials Installer shall furnish a 5-year warranty for the integrity of, and installation of the products. Warranty conditions shall be acceptable to the OWNER.

PART 2 - MATERIALS

2.01 HDPE GEOMEMBRANE

A. General Requirements:

1. The geomembrane shall consist of both smooth 30-mil HDPE and a smooth 80-mil HDPE.

2. The supplier shall furnish the test results for these procedures as well as certification that the materials meet the specifications.

B. Resin:

1. The polyethylene geomembrane shall be manufactured from new, first-quality polyethylene resin, and shall be designed and manufactured specifically for use in geomembranes. Reclaimed polymer shall not be added to the resin. The polyethylene resin shall meet the following specifications:

Specific Gravity:	>0.940, ASTM D-792, Method A, or ASTM D-1505
Melt Index:	ASTM D-1238 1.0 g/10 min. (maximum)

2. The geomembrane shall meet the specifications provided by the manufacturer at the time of installation. In addition, the geomembrane shall:

a. Contain a maximum of 1% by weight of additives, fillers or extenders (not including carbon black).
b. Contain 2% to 3% carbon black for ultra-violet light resistance.
c. Not have striations, roughness, pinholes, or bubbles on the surface.
d. Be produced so as to be free of holes, blisters, undispersed raw materials or any sign of contamination by foreign matter.

C. Labeling:

1. Labels on each roll or Factory panel shall identify:

a. Thickness of the material;
b. Length, width, and weight of the roll or factory panel;
c. Manufacturer;
d. Directions to unroll the material;
e. Product identification;
f. Lot number; and,
g. Roll or field panel number.

2.02 TRANSPORTATION, HANDLING, AND STORAGE

A. Transportation of the CONTRACTOR-supplied HDPE geomembrane materials is the responsibility of the CONTRACTOR. The CONTRACTOR shall be liable for all damages to the materials incurred prior to and during transportation to the site.

B. Handling, storage, and care of the CONTRACTOR-supplied HDPE geomembrane materials prior to and following installation at the site are the responsibility of the CONTRACTOR. The OWNER shall provide adequate storage space at the site. The CONTRACTOR shall be liable for all damage to the materials incurred during transportation, storage and installation, and prior to final acceptance of the liner system by the OWNER.

C. During shipment and storage, HDPE geomembrane shall be protected from ultraviolet light exposure, precipitation, or other inundation, mud, dirt, dust, punctures, cutting or any other damaging or deleterious conditions. Any additional storage procedures required by the geotextile manufacturer shall be the CONTRACTOR's responsibility.

D. D. Rolls shall be lifted by inserting a steel bar, capable of supporting the full weight of the roll, through the center core.

E. Rolls shall be stored away iron, high traffic areas and be continuously and uniformly supported rolls on a smooth, level prepared surface.

F. Rolls shall not be stacked more than three high.

PART 3 - EXECUTION

3.01 HANDLING AND PLACEMENT

A. Surface Preparation:

1. The CONTRACTOR shall be responsible for approving the supporting materials, and shall certify in writing that the surface on which the synthetics will be installed is acceptable. This certification of acceptance shall be given to the ENGINEER prior to commencement of HDPE geomembrane installation in the area under consideration.

2. Special care should be given to maintaining the integrity of the prepared subbase.

3. No geomembrane shall be placed onto an area which has become softened by precipitation or which has cracked due to desiccation. The soil surface shall be observed daily to evaluate desiccation, cracking and/or softening. The daily observations shall ascertain the effects of surface desiccation, cracking and/or softening upon integrity of the underlying subbase.

4. Any damage to the subbase caused by installation activities shall be repaired at the CONTRACTOR's expense.

3.02 GEOMEMBRANE DEPLOYMENT

A. Layout Drawing:

1. The CONTRACTOR shall produce layout drawings prior to geomembrane deployment. These drawings shall indicate the panel configuration, overlaps, and location of seams.

2. The layout drawings must be approved by the ENGINEER prior to the installation of any geomembrane. The layout drawings shall include dimensions, details, etc. The layout drawings, as modified and/or approved by the ENGINEER shall become part of these Specifications.

B. Panel Identification:

1. Each panel must be given an identification code (number or letter-number consistent with the layout plan). This identification code shall be agreed upon by the ENGINEER and CONTRACTOR. The field panel identification code shall be related, through a table or chart, to the original resin and the constituent rolls and factory panels.

C. Location:

1. Panels shall be installed as approved or modified at the locations and positions indicated in the layout drawings. Instruction on the boxes or wrapping containing the geomembrane shall be followed to assure that the rolls and/or factory panels are unrolled and/or unfolded in the proper direction for seaming.

D. Weather Conditions:

1. Installation of the geomembrane at an ambient temperatures below 40° F shall be in accordance to GRI Test Method GM9 "Cold Weather Seaming of Geomembranes," as attached in the Attachment 02713-A, and as approved by the ENGINEER. If it is determined that the conditions, procedures, or results are jeopardizing the performance of the material, the MDE, OWNER, ENGINEER, or CQA Manager may terminate operations until more favorable conditions prevail. A plan for placement and seaming procedures for temperatures below 40° F shall be submitted to the ENGINEER and CQA Manager for review prior to installation.

2. Geomembrane shall not be placed during any precipitation, in the presence of excessive moisture (e.g., fog, dew), in an area of ponded water, or in the presence of excessive winds.

E. Installation Schedule:

1. Exposure of deployed geomembrane panels to the surrounding environment shall be minimized to the extent possible via geocomposite/drainage medium and soil placement.

F. Method of Placement:

1. The CONTRACTOR shall ensure that:

   a. Extreme care shall be taken while placing both the smooth and textured geomembranes. The material shall first be aligned with the adjacent panel prior to unrolling. Adjustments for small misalignments can be attempted, with wide mouth vice grips, as the geomembrane is being unrolled.
   b. No geomembrane shall be placed in an area of ponded water or above excessively-moist or saturated subbase soils.
   c. No equipment used shall damage the geomembrane by handling, trafficking, leakage of hydrocarbons, or other means. No vehicular traffic shall be in direct contact with the geomembrane.
   d. No personnel working on the geomembrane shall smoke, wear damaging shoes, or engage in other activities which could damage the geomembrane.
   e. The method used to unroll the panels shall not cause folds, scratches, or crimps in the geomembrane and shall not damage the supporting soil.
   f. All elements immediately underlying the geomembrane must be kept clean and free of debris.
   g. The method used to place the panels shall minimize wrinkles (especially differential wrinkles between adjacent panels).
   h. Adequate temporary loading and/or anchoring (e.g., sand bags, tires), not likely to damage the geomembrane, shall be placed to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels).
   i. Direct contact with the geomembrane shall be minimized; i.e., the geomembrane in excessively high traffic areas shall be protected by geotextiles, extra geomembrane, or other suitable materials.

G. Damage:

1. Any field panel or portion thereof which becomes seriously damaged (torn, twisted or crimped) shall be replaced at no cost to the OWNER. Less serious damage may be repaired at the ENGINEER's option and at no cost to the OWNER.

2. Damaged panels or portions of damaged panels, which have been rejected, shall be removed from the work area.

3.03 PANEL OVERLAPPING AND SEAMING

A. Panel Layout:

1. Seams shall be oriented parallel to the line of maximum slope, i.e., along, not across, the slope. Horizontal butt seams shall not be permitted on side slopes of 10 percent or greater.

2. No seams shall be located in the areas of potential stress concentrations, as so deemed by the ENGINEER.

3. Geomembrane panels shall be sufficiently overlain for seaming. Seams shall be a minimum of five (5) inches for dual hot wedge seams and three (3) inches for extrusion seams.

B. Seam Preparation:

1. Prior to any seaming, the seam area shall he clean and free of moisture, dust, dirt, debris of any kind and foreign material.

2. If seam overlap grinding is required, the process shall be done according to the manufacturer's instruction within one hour of the seaming operation and in a way that does not damage the geomembrane.

3. Seams shall he aligned with the fewest possible number of wrinkles and "fishmouths."

C. Seaming Equipment and Products:

1. Approved processes for field seaming are extrusion welding and double-wedge fusion welding. Extrusion welding shall be utilized to seam the geomembrane widthwise and to make detailed seams; the fusion weld may be utilized for lengthwise seams. Only apparatus of a make and model which have been specifically approved by the geomembrane manufacturer, and subsequently approved by the ENGINEER, shall be used. The CONTRACTOR shall submit to the ENGINEER documentation describing the apparatus and the approval granted by the geomembrane manufacturer.

D. Weather Conditions for Seaming:

1. Unless authorized in writing by the ENGINEER, no seaming shall be attempted at ambient temperature below 40°F for above 104°F (40°C) measured one foot above the membrane. At ambient temperatures between 40°F and 50°F, seaming shall be allowed if the geomembrane is preheated by either sun or hot air device, and if there is no excessive

cooling resulting from the wind. At ambient temperatures above 50°F, no preheating will be required. In all cases, the geomembrane shall be dry and protected from wind damage.

2. If the CONTRACTOR intends to use methods, which may allow seaming at ambient temperatures below 40°F, he/she shall demonstrate that the seam so produced is equivalent to those produced under normally-approved conditions, and that the overall quality of the geomembrane is not adversely affected. In addition, an addendum to the contract between the OWNER and the CONTRACTOR is required which specifically states that the seaming procedures do not cause any physical or chemical modification to the geomembrane that will generate any short or long term damage to the geomembrane.

E. Trial Seams:

1. Trial seams shall be made on fragment pieces of geomembrane to verify that seaming conditions are adequate. Such trial seams shall be made in the presence of the ENGINEER, or ENGINEER's designee, at the beginning of each seaming period, and at least once each four hours, for each seaming apparatus used that day. Also, each seamer shall make at least one trial seam each day. Trial seams shall be made under the same conditions as actual seams. The trial seams sample shall be at least 5 feet long by 1 foot wide (after seaming) with the seam centered lengthwise. Seam overlap shall be as previously indicated.

2. Two adjoining specimens, each 1.0-inch wide, shall be cut for the trial seam sample by the CONTRACTOR. The specimens shall be tested respectively in shear and peel using a field tensiometer capable of providing measurable results. If a specimen fails, the entire operation shall be repeated two additional times. If the additional specimen fails, the entire operation shall be repeated twice. If either of the additional specimens fail, the seaming apparatus or seamer shall not be accepted and shall not be used for seaming until the deficiencies are corrected and two consecutive successful trial welds are achieved.

3. Upon completion of the tests described above, the remaining portion of the trial seam sample may be discarded or subjected to destructive testing. If a trial seam sample fails a test described above, then a destructive test shall be performed on a new seam sample taken from an actual seam placed by the liner installer. The new seam sample must be taken during the same work shift from which the previously failed trial seam sample was obtained. These samples shall be forwarded to the ENGINEER and, if they fail the tests, the procedure indicated in Section 3.03.I.1.f of these Specifications shall apply. The conditions of this paragraph shall be considered as met for a given seam if a destructive seam test has already been taken from the considered seam(s).

F. General Seaming Procedures:

1. The general seaming procedures used by the CONTRACTOR shall be as follows:

   a. Prior to seaming, the seam area shall be clean and free of moisture, dust, dirt, debris of any kind, and foreign material.
   b. Seaming shall extend to the outside edge of panels to be placed in the anchor trench.
   c. If required, a firm substrate shall be provided by using a flat board, a conveyor belt, or similar hard surface directly under the seam overlap to achieve proper support.
   d. If seaming operations are carried out at night, adequate illumination shall be provided.
   e. Fishmouths or wrinkles at the seam overlaps shall be cut along the ridge of the wrinkle in order to achieve a flat overlap. The cut fishmouths or wrinkles shall be seamed and any portion where the overlap is inadequate shall then be patched with an oval or round patch of the same geomembrane extending a minimum of 6 inches beyond the cut in all directions.

G. Seaming Process:

1. Approved processes for field seaming are extrusion welding and fusion welding. Seaming equipment shall not damage the geomembrane. Only apparatus which the ENGNINEER has specifically approved by make and model shall be used.

2. Extrusion Procedures:

   a. The Geosynthetics Materials Installer shall maintain at least one spare operable seaming apparatus on site.
   b. Extrusion welding apparatus shall be equipped with gauges indicating he temperature in the apparatus and at the nozzle.
   c. Prior to beginning a seam, the extruder shall be purged until all heat-degraded extrudate has been removed from the barrel. Whenever the extruder is stopped, the barrel shall be purged of all heat-degraded extrudate.
   d. The Geosynthetics Materials Installer shall provide documentation regarding the welding rod or resin to the CQA Manager and shall certify that the welding rod or resin in compatible with the specifications, and consists of the same resin as the geomembrane.
   e. The edges of cross seams shall be ground to a smooth incline (top and bottom) prior to welding, and the extrudate must cover a minimum of 80 percent of the wind. Excessive grinding (width

and depth) shall be cause for rejection of the Work. Grinding that exceeds 10% of the parent material thickness shall be considered excessive.

3. Fusion Procedures:

a. The Geosynthetics Materials Installer shall maintain at least one spare operable seaming apparatus on site.
b. Fusion-welding apparatus shall be automated vehicular-mounted devices equipped with gauges giving the applicable temperatures, pressures and speed settings.
c. The edges of cross seams shall be ground to a smooth incline (top and bottom) prior to welding, and the extrudate must cover a minimum of 80 percent of the grind. Excessive grinding (width and depth) shall be cause for rejection of Work.
d. A movable protective layer may be used directly below each geomembrane overlap to be seamed to prevent the buildup of moisture between the panels.

H. Non-destructive Seam Continuity Testing:

1. The CONTRACTOR shall non-destructively test all field seams over their full length using a vacuum test unit, air pressure (for double fusion seams only), or other approved method. Continuity testing shall be performed as the seaming progresses, not at the completion of all field seaming. All non-destructive testing will be observed by the CQA Manager. The CONTRACTOR shall complete any required repairs in accordance with section 3.03.J of these Specifications. Non-destructive testing shall be conducted at ambient temperatures appropriate for seaming. The following procedures shall apply to locations where seams cannot be nondestructively tested:

a. All such seams shall be cap-stripped with the same geomembrane.
b. If the seam is accessible to testing equipment prior to final installation, the seam shall be non-destructively tested prior to final installation.
c. If the seam cannot be tested prior to final installation, the seaming and stripping operations shall be observed by the ENGINEER for uniformity and completeness.

2. Vacuum Testing:

a. The equipment shall be comprised of the following:

1) Energize the vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft neoprene

gasket attached to the bottom, porthole or valve assembly, and a vacuum gauge;

2) Steel vacuum tank and pump assembly equipped with a pressure controller and pipe connections;

3) A rubber pressure/vacuum hose with fittings and connections;

4) A bucket and wide paint brush; and,

5) A soapy solution.

b. The following procedures shall be followed:

1) Energize the vacuum pump and reduce the tank pressure to approximately 10 inches of mercury; i.e., 5 psi gauge.

2) Wet a strip of geomembrane with soapy solution on an area approximately 6 inches larger in each dimension than the vacuum box being utilized.

3) Place the box over the wetted area.

4) Close the bleed valve and open the vacuum valve.

5) Ensure that a leak tight seal is created.

6) For a period of not less than 30 seconds, examine the geomembrane through the viewing window for the presence of soap bubbles.

7) If no bubble appears after 30 seconds, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum 3 inch overlap, and repeat the process.

8) All areas where soap bubbles appear shall be marked and repaired in accordance with Section 3.03 of these Specifications and retested.

3. Air Pressure Testing (For Double Fusion Seams Only):

a. The following procedures are applicable to those processes, which produce a double seam with an enclosed space.

b. The equipment shall consist of the following:

1) An air pump (manual or motor driven), equipped with a pressure gauge, capable of generating and sustaining a pressure between 25 to 30 psi, mounted on a cushion to protect the geomembrane.

2) A rubber hose with fittings and connections.

3) A sharp hollow needle, or other approved pressure feed device.

4) Air pressure testing shall be done in accordance with GRI GM6.

c. The following procedures shall be followed:

1) Seal both ends of the seam to be tested.

2) Insert needle, or other approved pressure feed device, into the tunnel created by the fusion weld.

3) Insert a protective cushion between the air pump and the geomembrane.

4) Energize the air pump to a pressure between 25 and 30 psi, close valve, and sustain the pressure for not less than 5 minutes.

5) If loss of pressure exceeds 3 psi, or does not stabilize, locate faulty area and repair in accordance with Section 3.03.J of these Specifications.

6) Remove needle, or other approved pressure feed device, and seal repair in accordance with Section 3.03.J of these Specifications.

7) At the completion of any air pressure test on a double fusion seam, the end of the seam opposite where the needle was inserted shall be cut, and air release documented, to assure continuity. Alternatively, seam continuity could be check before the air pressure test by sealing off one end and passing air through the channel. Additionally, the pressurized channel should be allowed to stabilize before the five minute pressure test commences.

I. Destructive Testing:

1. Destructive seams tests shall he performed at selected locations. The purpose of these tests is to evaluate seam strength. Seam strength testing shall be done as the seaming progresses, not at the completion of all field seaming.

a. Location and Frequency:

1) Destructive test samples shall be collected at a minimum average frequency of one test location per 500 feet of seam length. Samples, in addition to the minimum average frequency, shall be taken by the CONTRACTOR at locations selected by the ENGINEER. Test locations shall be determined during seaming, and nay be prompted by suspicion of excess crystallinity, contamination, offset welds, or any other potential cause of imperfect welding. The CONTRACTOR shall not be informed in advance of the locations where the seam samples will be taken. The ENGINEER, at the recommendation of the ENGINEER, reserves the right to increase the frequency in accordance with actual performance results of samples taken.

b. Sampling Procedure:

1) Samples shall be cut by the CONTRACTOR at locations designated by the ENGINEER as the seaming progresses in order to obtain laboratory test results before the geomembrane is covered by another material. Each sample shall be numbered and the sample number and location identified on the panel layout drawing. All holes in the geomembrane resulting from the destructive seam sampling shall be immediately repaired in accordance with the repair procedures described in Section 3.03.J of these Specifications. The continuity of the new seams in the repaired area shall be tested according to Section 3.03.J of these Specifications.

c. Size of Samples

1) The samples shall heat least 12 inches wide by 44 inches long with the seam centered lengthwise. Two 1-inch wide sifips shall be cut from each end of the sample, and these shall be tested in the field. The remaining sample shall be cut into three parts and distributed as follows:

a) One portion to the CONTRACTOR for laboratory testing, 12 inches x 12 inches.

b) One portion for the ENGINEER's Laboratory for testing, 12 inches x 18 inches.

c) One portion to the OWNER for archive storage, 12 inches x 12 inches.

d. Field Testing

1) The two, 1-inch wide strips shall be tested in the field in the presence of the ENGINEER, or designated representative, by hand or tensiometer capable of providing measurable results, for peel and shear respectively, and shall not fail in the seam. If any field test sample fails to pass, then the procedures outlined in Section 3.03.I.l.f of these Specifications shall be followed.

e. Laboratory Testing

1) Testing by the CONTRACTOR shall include "Seam Strength" and "Peel Adhesion" (ASTM D-6392-99 with 1-inch wide strip, tested at 2 inches per minute). Both tracks of double fusion seams shall be tested. The minimum acceptable values to be obtained in these tests are those indicated in Table 02713-2. At least 5 specimens shall be tested for each test method. To be acceptable, 4 out of 5 samples shall pass shear and peel testing. A failing fifth specimen shall exhibit at least 70% of the parent material strength iii shear and 50% of the parent material strength in peel. If these percentages are not met for the fifth sample, the sample is considered a Destructed Test Failure. Specimens shall be selected alternately by test from the sample (i.e., peel, shear, peel, shear, etc.). The CONTRACTOR shall provide the ENGINEER test results no more than 48 hours after the samples are received at the laboratory.

f. Procedures for Destructive Test Failure

1) The following procedures shall apply whenever a sample fails the destructive test, whether the test conducted by the ENGINEER's Laboratory, the CONTRACTORs Laboratory, or by field tensiometer. The CONTRACTOR shall have two options:

a) The CONTRACTOR can reconstruct the seam between any two passed test locations.

b) The CONTRACTOR can trace the welding path a minimum of 10 feet in each direction from the failed test and take a small sample for an additional field test at each location. If these additional samples pass the tests, the full laboratory samples shall be taken. If these laboratory samples pass the tests, then the seam shall be reconstructed between these locations. If either sample fails, then the process shall be repeated to establish the zone in which the seam should be reconstructed. In any case, all acceptable seams must be bounded by two locations from which samples passing laboratory destructive tests have been taken. In cases exceeding 150 feet of reconstructed seam, a sample taken from within the reconstructed zone must pass destructive testing. Whenever a sample fails, additional testing may be required for seams that were seamed by the same seamer and/or seaming apparatus, or seamed during the same time shift.

J. Defects and Repairs

1. Identification:

a. All seams and non-seam areas of the geomembrane will be examined by the ENGINEER for identification of defects, holes, blisters, undispersed raw materials and any sign of contamination by foreign matter.

b. The surface of the geomembrane shall be clean at the time of examination. The geomembrane surface shall be broomed or washed by the CONTRACTOR if the amount of dust or mud inhibits examination.

c. The CONTRACTOR shall ensure that this examination of the geomembrane precedes any seaming of that section.

2. Evaluation:

a, Each suspect location, both in seam and non-seam areas, shall be nondestructively tested using the methods described in Section 3.03.H of these Specifications as appropriate. Each location which fails the non-destructive testing shall be marked by the ENGINEER and repaired by the CONTRACTOR. Work shall not proceed with any materials which will cover locations which have been repaired until laboratory test results with passing values are available.

3. Repair Procedures:

a. Any portion of the geomembrane exhibiting a flaw, or failing a destructive or non-destructive test, shall be repaired by the CONTRACTOR. Several procedures exist for the repair of these areas. The final decision as to the appropriate repair procedure shall be agreed upon between the ENGINEER, OWNER and the CONTRACTOR. The procedures available include:

1) Patching, used to repair large holes, tears, undispersed raw materials, and contamination by foreign matter.

2) Grinding and re-welding, used to repair small sections, at the discretion of the ENGINEER, of extruded seams.

3) Spot welding or seaming, used to repair small sections of extruded seams.

4) Cap strips used to repair large lengths (1-15 feet) of failed seams.

5) Removing bad seam and replacing with a strip of new material welded into place used with large lengths of fusion seams.

b. In addition, the following provisions shall be satisfied:

1) Surfaces of the geomembrane which are to be repaired shall be ground no more than one hour prior to the repair.

2) All surfaces must be clean and dry at the time of repair.

3) All seaming equipment used in repairing procedures must be approved.

4) The repair procedures, materials, and techniques shall be approved in advance of the specific repair by the ENGINEER, the OWNER and the CONTRACTOR.

5) The patches or caps shall extend approximately 9 inches beyond the edge of the defect. All corners of caps or patches shall be rounded with a radius of at least 3 inches,

6) The geomembrane below large caps should be appropriately cut to avoid water or gas collection between the two sheets.

4. Verification of Repairs:

a. Each repair shall be numbered and logged.

b. Each repair shall he non-destructively tested using the methods described in Section 3.03.H of these Specifications as appropriate. Repairs which pass the non-destructive test shall be taken as an indication of an adequate repair.

c. Large caps may be of sufficient extent to require destructive test sampling, at the discretion of the ENGINEER. Failed tests indicate that the repair shall be redone and retested until a passing test results.

5. Large Wrinkles:

a. When seaming of the geomembrane is complete (or when seaming of a large area of the geomembrane is complete) and prior to placing overlying materials, the ENGINEER shall identify all excessive liner wrinkles (1 foot or greater). The CONTRACTOR shall cut and re-seam all wrinkles so identified. The seam thus produced shall be tested like any other seam.

3.04 MATERIALS IN CONTACT WITH THE GEOMEMBRANE

A. The following provisions require the CONTRACTOR to take all necessary precautions so that the installation of these materials does not damage the geomembrane. Installation of the geomembrane shall be placed on surfaces approved by the Installer and CQA personnel only. If approved, additional loosely placed geotextile sections may be used by the CONTRACTOR as protection for the geomembrane.

B. Geocomposite material shall be placed directly above the geomembrane. Care shall be taken not to drag the geocomposite across the geomembrane. Soil materials placed above the geosynthetics shall be installed with care. On the

sideslope, soil placement shall proceed from the bottom of the slope upward, unless otherwise approved by the ENGINEER.

C. Equipment shall not be driven directly on the geomembrane. Unless otherwise specified by the ENGINEER, all operational equipment utilized to place overlying soil materials shall adhere to the following soil thicknesses:

Maximum Allowable Equipment Ground Pressure (psi)	Soil Thickness Above Geosynthetics (feet)
<5	1.0
<10	1.5
<20	2.0
>20	3.0

D. Placement shall be such as to prevent wrinkles, snags and tears. Placement shall be in the presence of the appropriate CQA personnel.

E. The CONTRACTOR shall be responsible for the placement of the geomembrane without wrinkles, folds or extraneous materials that would inhibit the geomembrane complete and intimate contact with the underlying layer.

3.05 LINER SYSTEM ACCEPTANCE

A. The CONTRACTOR shall retain all ownership and responsibility for the geosynthetics in the liner system until acceptance by the OWNER.

B. The geosynthetic liner system shall be accepted by the OWNER when:

1. The installation is complete.

2. The edge of liner markers are installed.

3. All documentation of the installation is complete, including the ENGINEER's Certification Report.

4. Verification of the adequacy of all Field seams and repairs, including associated testing, is complete.

5. Written certification documents, including the Record Drawings, sealed by a registered professional engineer, have been received by the OWNER from the CONTRACTOR.

END OF SECTION

DIVISION 15 – MECHANICAL

15200
HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1- GENERAL

1.01 SUMMARY

A. The Work covered by this Section includes furnishing all labor, equipment, and materials required to furnish, install, and test High Density Polyethylene (HDPE) Pipe, including fittings and accessories, as shown on the Drawings to be used for the subslab vapor mitigation system.

1.02 QUALITY ASSURANCE

A. Each pipe section and each fitting shall be carefully inspected for pitting, honeycombing, cracks, spalled areas, and other imperfections which would be cause for rejection. No damaged or otherwise defective pipe shall be incorporated in the work. Pipe shall meet all requirements of ASTM F-714.

B. The pipe manufacturer shall furnish the ENGINEER with a written certification that all HDPE pipe furnished was made of high density, high molecular weight polyethylene pipe material meeting the requirements of Type III, Class C, Category 5, Grade P 34, as defined in ASTM D-1248.

C. Each section of pipe shall be marked at intervals of 5 feet or less with the manufacturers name or trademark, plant code, date of manufacture, nominal pike size, class, and profile number. Each fitting or special section shall be marked with the manufacturer's name or trademark and nominal size.

D. The CONTRACTOR shall follow the manufacturer's recommendations during installation. Any costs for additional equipment, labor, or materials necessary to satisfy the manufacturer's recommendations against flotation shall be borne by the CONTRACTOR at no additional cost to the OWNER.

E. The pipe manufacturer shall provide technical assistance to the CONTRACTOR as needed to ensure that pipe material is being installed properly.

F. Complete shop drawings and engineering data shall be submitted to the ENGINEER in accordance with Section 01300 - SUBMITTALS of these specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Pipe and Materials

The pipe supplied under this Specification shall be high performance, high molecular weight, high density polyethylene pipe equal to Driscopipe 1000 as manufactured by Phillips Driscopipe, Inc., and shall conform to ASTM D-1248, Type III, Class C, Category 5, P34. Minimum cell classification values shall be 345434C in accordance with ASTM D-3350. The fittings supplied under this Specification shall be made from a polyethylene compound having a cell classification equal to or exceeding the compound used in the pipe or shall be manufactured using a polyethylene compound having a cell equal to or exceeding the cell classification of the pipe supplied under this specification. To ensure compatibility of polyethylene resins, all fittings supplied under this Specification shall be from the same manufacturer as the pipe being supplied.

B. Physical Properties of Pipe Compound

1. Density

The density shall be no less than 0.941 – 0.955 gms/cm^3 as referenced in ASTM D-1505.

2. Melt Flow

Melt Flow shall be no greater than 0.15 gms/10 min when tested in accordance with ASTM D-1238 – Condition E. (Melt flow shall be no greater than 4.0 gms/10 min. when tested in accordance with ASTM D-1238 - Condition F.)

3. Flex Modulus

Flex modulus shall be equal to or greater than 110,000, but less than 160,000 psi in accordance with ASTM D-790.

4. Tensile Strength at Yield

Tensile strength shall be equal to or greater than 3,200, but less than 3,500 psi in accordance with ASTM D-638.

5. Environmental Stress Crack Resistance (ENSCR)

   ENSCR shall be in excess of 5,000 hours with zero failures when tested in accordance with ASTM D-1693 - Condition C.

6. Hydrostatic Design Basis (HDB)

   HDB shall be 1,600 psi at 23°C when tested in accordance with ASTMD-2837.

C. Deviations

If a supplier elects to submit a bid that does not meet all of the requirements of this Specification, the bid shall include a written description of the deviation with data that shows the magnitude of the deviation and the justification for the deviation from this Specification. The ENGINEER will then determine if the material is acceptable for use on the project. If the supplier does not inform the ENGINEER of the deviation, the material may be rejected and replaced at no cost to the OWNER.

D. Pipe supplied under this Specification shall have a nominal IPS (Iron Pipe Size) OD unless otherwise specified. The SDR (Standard Dimensional Ratio) of the pipe shall be as indicated on the Drawings. Unless otherwise stated, pipe shall be SDR 17.

E. The supplier shall provide certified laboratory data by an independent laboratory to verify the physical properties of the materials supplied under this Specification.

F. Rejection

Polyethylene pipe and fittings may be rejected for failure to meet any of the requirements of this Specification.

G. Perforations

Polyethylene perforated pipe shall have perforations machined by the pipe manufacturer to the dimensions shown on the drawings prior to delivery to the site. If perforations are not as specified on the contract drawings, the pipe will be rejected.

H. Fittings

Fittings shall be produced which meet the dimensions shown on the Drawings. If this requires the fittings to be molded or specifically constructed instead of fabricated, it shall be included in the bid price.

I. Contained Piping System

1. General

Each contained piping system shall consist of primary piping system with SDR equal to 17, supported within SDR 21 HDPE secondary containment housing. Each system shall be provided with suitable drains and vents and be designed to provide complete drainage of both the primary and secondary containment piping. Interstitial supporting devices shall be provided within the secondary containment pipe, and shall be designed to allow continuous drainage in the annular space to the drain points. Drain fittings shall be designed to allow a valve attachment to be made so that the secondary containment compartment may be readily drained and manually checked for leaks.

2. Materials

Interstitial supporting devices used to center and support the primary piping within the secondary containment piping shall be manufactured from materials suitable for such service in accordance with ASTM and ANSI specifications. All fittings shall be pre-assembled and pre-tested by the manufacturer.

2.02 BEDDING AND BACKFILL

A. HDPE pipe shall be laid as specified and bedded to lines, grades and dimensions shown on the Drawings. Bedding and backfill shall be in accordance with ASTM D-2321, and Section 02232 – GRANULAR MATERIALS.

PART 3 - EXECUTION

3.01 ALIGNMENT

A. The location of the HDPE pipe shall be in accordance with the lines, grades, and depths as shown on the Drawings.

3.02 HANDLING

A Handling of Pipe

Pipe shall be stored on clean, level ground to prevent undue scratching or gouging of the pipe. If the pipe must be stacked for storage, such stacking shall be done in accordance with the pipe manufacturer's recommendations. The handling of the pipe shall be performed in such a manner that it is not damaged by dragging over sharp objects or cut by chokers or lifting equipment.

B. Repair of Damaged Sections

Segments of pipe having cuts or gouges should be cut off and removed. The undamaged portions of the pipe shall be rejoined using the butt fusion joining method.

C. Pipe Joining

1. Sections of polyethylene pipe should be joined into continuous lengths on the site above ground. The joining method shall be butt fusion method and be performed in strict accordance with the pipe manufacturer's recommendations. Only personnel specially trained in butt fusing HDPE pipe shall be allowed to join pipe. This may require the CONTRACTOR to retain a technical representative of the manufacturer to observe the pipe installation and confirm proper installation. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements, alignment, and fusion pressures.

2. Pipe connections to valves shall be flange connected with neoprene gaskets using HDPE stub ends and stainless steel backing rings and bolts. Flanges shall have bolt hole patterns to meet ANSI/AWWA C110/A21.10-93 150 lb. dimensions.

3. All carrier-to-carrier joints and containment-to-containment joints shall be made using thermal fusion procedures recommended by the manufacturers. All carrier-to-carrier joints shall be inspected before final closure of the containment.

D. Handling of the Fused Pipe

Fused segments of pipe shall be handled so as to avoid damage to the pipe. When lifting fused sections of pipe, chains or cable type chokers should be avoided. Nylon strings are preferred. Spreader bars should be

used when lifting long fused sections. Care should be exercised to avoid cuffing or gouging the pipe.

3.03 CONCRETE EMBEDMENT AND ENCASEMENT

A. After pipe joints are completed, the voids at the joints in the embedments shall be brought to proper grade. Where concrete is placed over or along the pipe, it shall be placed in such manner as not to injure the joints or displace the pipe.

B. While placing concrete embedment and until the concrete sets up, each pipe shall be properly braced and held to grade so as to prevent any possible shifting or floating of the pipe.

C. No cleavage line between the base concrete and the side or top concrete will be allowed. Backfilling shall be done ma careful manner and at such a time after concrete embedment or encasement has been placed as not to damage the concrete in any way.

D. Backfill placed over concrete embedment, encasement, cradle, or block shall not be placed until the concrete has set up to such an extent that backfill operations will not damage the concrete.

3.04 TESTING

A. The entire length of all non-perforated HDPE leachate piping shall be field tested for tightness by a test as described hereinafter.

B. The CONTRACTOR shall furnish all other labor, materials, and equipment, including required pumps with regulated bypass meters and gauges, .for conducting of the pipeline tests.

C. The timing and sequence of testing shall be scheduled by the CONTRACTOR, subject to the approval of the ENGINEER. The CONTRACTOR shall provide the ENGINEER with a minimum of two (2) working days notice prior to the start of any test. All tests shall be observed by the ENGINEER.

D. The CONTRACTOR shall repair any leaks discovered during the initial filling of the pipeline and during the testing sequence. All known and visible leaks shall be repaired. If leakage occurs, the point or points of leakage shall be sought out and remedied by the CONTRACTOR at no additional cost to the OWNER.

E. Each section of non-perforated HDPE header piping shall be tested. The section will be tested by applying an internal 5-psi air pressure on the pipe until a stable air pressure of 5 psi is arrived at and maintained for a

minimum of 10 minutes. In addition, the ENGINEER will require the pipe to be filled with water to test all valve and flanged connections. A static pressure of 10 psi must be arrived at and maintained for a minimum of 20 minutes to test all valve and flanged connections. Each section of non-perforated pipe must pass the tests.

F All meters, fixtures, devices or appliances which are connected to the pipeline system and which might be damaged if subjected to the specified test pressure shall be disconnected and the ends of the branch lines plugged or capped during the test procedures. Items which are damaged during the testing procedure shall be repaired or replaced by the CONTRACTOR at no expense to the OWNER.

G. Each section of dual containment pipe that lies between a containment manhole or fittings that require a solid polyethylene stop shall be tested before proceeding with installation of the next section of pipe. The section will be tested by applying a 5-psi air pressure on the carrier and containment pipes separately until a stable air pressure of 5 psi is arrived at and maintained for a minimum of 10 minutes. Each section must pass this test before proceeding with the dual containment installation. A 10 psi hydrostatic test for 20 minutes will be performed on the carrier pipe when the ENGINEER determines it to be necessary.

H. In all test cases, the pumps shall contain adequate gauges to indicate the internal pipe pressure during the test. The internal pressure must be maintained for the duration of the test to be considered passing.

I. No pipeline installation or hydraulic structure shall be accepted until all known and visible leaks have been repaired. Any tap locations for pressure lines or gauges shall be repaired. The locating and repairing of leaks and/or tap locations shall be performed by the CONTRACTOR at no additional expense to the OWNER.

END OF SECTION

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FMC Corporation

Appendix C
Operation and Maintenance Plan
Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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A INSPECTION REPORT FORMS

LIST OF ACRONYMS

BMP(s)	Best Management Practice(s)
CMI	Corrective Measures Implementation
ERM	Environmental Resources Management, Inc.
FMC	FMC Corporation
HASP	Health and Safety Plan
MDE	Maryland Department of Environment
NAPL	Non-aqueous Phase Liquid
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
PCI	Pavement Condition Index
SMP	Soil Management Plan
SSV	Subslab Venting System
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
Work Plan	CMI Work Plan

1.0 INTRODUCTION

1.1 BACKGROUND

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Operation and Maintenance (O&M) Plan for the 1600 East Patapsco Avenue Facility (North Parcel). The North Parcel consists of the approximately 23-acre portion of the 90-acre property (Site) north of the 67-acre former Main Plant (1701 East Patapsco Avenue) (Figure 1). This O&M Pan was prepared to support the Corrective Measures Implementation (CMI) for the Site. The O&M Plan is a 50 percent design submittal and will be updated after the developer completes the design and construction of the corrective measures on the North Parcel. The updated version of the O&M Plan will include the O&M requirements for the specific type of cover constructed on the Site.

1.2 PURPOSE

The intent of this O&M Plan is to outline the procedures, frequency and record needs associated with the post-construction inspection, repair and maintenance activities that will be conducted at the Site. It will be used as a reference document to ensure quality and completeness of the Site inspections, and help identify areas requiring maintenance.

1.3 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- Section 2 – Corrective Measures Summary reviews the corrective measures to be implemented;
- Section 3 – Routine Monitoring and Maintenance describes the inspection and maintenance activities to be performed on a regular basis;
- Section 4 – Non-Routine Maintenance describes the procedures for conducting less common maintenance activities; and
- Section 5 – Documentation and Reporting describes the requirements for documenting and reporting the inspection and maintenance activities.

2.0 *CORRECTIVE MEASURES SUMMARY*

The corrective measures alternative selected for implementation at the Site is described below:

- **Source Area Removal and Disposal**. Removal and off-site disposal and/or on-site treatment of approximately 200 cubic yards of non-aqueous phase liquid (NAPL)-impacted (chlorobenzene) soils and perched aquifer material in the vicinity of well MW-23. Soils could be excavated down to the top of the gray clay confining layer. Subsurface structures and sewers would also be removed from the excavation area. A screening mechanism will be utilized during removal of the soils for determining the absence or presence of NAPL. The excavation will be backfilled with soils from the 17-acre portion of the North Parcel or imported fill material;
- **Containment**. Placement of a low permeability cover in the form of an engineered asphalt cap or other cover (i.e. buildings, concrete, asphalt or landscaped areas) on five of the six acres of the northern portion of the North Parcel. The low permeability cover would reduce infiltration of rain water into the subsurface, and thus reduce leaching of chlorobenzene contained in soils into the underlying perched ground water. Final thickness of pavement, stone and subbase for paved areas will be determined upon final design and evaluation of geotechnical data and traffic flow;
- **Long-term Monitoring**. Annual ground water monitoring and sampling will be conducted in selected existing on-site and off-site monitoring wells; and
- **Institutional Controls**. Use controls will be recorded for the on-site property, and similar use controls will be necessary for the Dana and Fleet properties. Use controls will be more restrictive for the six-acre portion of the North Parcel than those proposed for the 17-acre portion of the North Parcel.

3.0 *ROUTINE MONITORING AND MAINTENANCE*

This section describes routine monitoring and maintenance activities that will be performed to ensure the long-term effectiveness and integrity of the corrective measures. Physical maintenance requirements for the Site will include maintenance of the paved and landscaped areas ("the cap") to prevent exposure of underlying impacted soil and limited infiltration into ground water. The developer will be responsible for maintenance inspections, performing maintenance of the cap, and for maintaining all cap inspection records.

The following sections outline the inspection procedures to be followed at the Site to determine when maintenance of the paved and/or landscaped areas is required.

3.1 *HOUSEKEEPING*

Best management practices (BMPs) will be incorporated into post-construction operations at the Site. BMPs will include the following:

- Keeping vehicle traffic on surfaces designed for that purpose (e.g., access road);
- Controlled usage of deicing chemicals and salts within the limits of the capped areas; and
- Using the areas in a manner that does not adversely impact the functionality of the corrective measures.

3.2 *INSPECTIONS*

Site inspections for the cap, landscaped areas, and monitoring wells will be performed annually, at a minimum. Site inspections will be performed by a qualified inspector (e.g., licensed Professional Engineer or someone under the direct supervision of a licensed Professional Engineer). To ensure the integrity and the continued proper functioning of the subslab venting system (SSV), if one is installed, inspections of the SSV system will be conducted quarterly during the first year of operation and thereafter on an annual basis, at a minimum.

The inspections will be performed by the developer. The inspection will note any areas where repairs are necessary, and provide a written description, including photo documentation, or any defects to be repaired. Ongoing inspections conducted should confirm that the system is still operational and that system components have not failed due to age or fouling. Inspection observations will be recorded on the appropriate inspection report form (Attachment A), copies of which will be kept on file. Records will be maintained in a designated area at the Site for review by the United States Environmental Protection Agency (USEPA) and the Maryland Department of Environment (MDE). A summary and schedule for any activities necessary to maintain corrective action components will be included with the inspection reports.

The following sections provide a summary of activities to be performed during the Site inspections.

3.2.1 *Engineered Cover*

As described in the CMI Work Plan, paved areas of the Site will consist of subbase and asphalt or concrete pavement. The subbase and pavement must be maintained to ensure the integrity of the cap. Inspection of the pavement will

include, but not be limited to, visual observations to determine the occurrence of the following items:

- Differential settlement/subsidence and significant surface water ponding;
- Erosion, cracking, potholes or depressions of the pavement materials;
- Stability or structural failing;
- Obstruction of blocking of drainage facilities; and
- Growth of vegetation.

A pavement management system, known as the Pavement Condition Index (PCI), will be utilized at the Site. The purpose of this system is to plan and prioritize future pavement maintenance needs. The system is based on a numerical rating of pavement distress as published by the United States Army Corps of Engineers (USACE). The system is based on professional assessment and judgment. Inspections are to be performed by slowly traversing the paved areas and observing the surface conditions. The following chart provides the index to be used to describe the pavement condition.

PCI	Characterization	Description
1	New crack-free surface	Smooth texture
2	Oxidation has started	Short hairline cracks start to develop
3	Oxidation in advanced state	Hairline cracks are longer and wider
4	Oxidation complete	Crack area is 0.25 inches wide and crack lines have found base faults
5	Moisture penetrating through 0.25 inch cracks. Loose material evident	Texture of surface becoming rough. Preventative maintenance.
6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines.
7	Potholes develop in low spots	Gatoring areas begin to break up. Overall texture very rough.
8	Potholes developing	Pavement breaking up
9	Heaving due to excessive moisture in base	Distorts entire surface
10	General breakup of surface	Major deterioration

Any inspection indicating a PCI of 4 or greater for any portion of the Site will require maintenance activities including milling and resurfacing of the pavement. The repairs should be completed before the pavement degrades beyond a PCI of 4. Documentation will be prepared to describe the conditions being repaired, the location of the repair, and the repairs made to correct the situation. Repair documentation will be maintained in a designated area at the Site.

3.2.2 *Landscaped Areas*

Landscaped areas will be graded and filled with at least 18 inches of approved clean fill and six inches of topsoil as described in the CMI Work Plan. The landscaping must be maintained to ensure the integrity of the cap.

Inspections will be performed by traversing the landscaped areas and observing the surface conditions. Landscaped areas will be inspected to evaluate the health and condition of plants, signs of mortality, animal burrows, erosion, or other features that may compromise the cap integrity. Of particular importance would be any feature such as an uprooted tree or excess erosion that would compromise the thickness of the cap or would contravene the purpose of the cap.

Inspection of the limited landscaped areas, primarily along the Site perimeter, will include, but not be limited to, visual observations to determine the occurrence of the following items:

- Vegetation health and plant condition;
- Indications of animal, rodent, or insect disturbance;
- Erosion, excessive erosion, and uprooted trees; and
- Other features that may compromise landscape integrity.

3.2.3 *Monitoring Wells*

In accordance with Section 2.1 of the Ground Water Monitoring Plan (Appendix D), the monitoring wells will be inspected annually and repaired as necessary. Inspection of monitoring wells included in the long-term monitoring program will consist of visual observations to determine the occurrence of the following items:

- Missing well cap or lock;
- Damaged well casing (inner and outer, if applicable);
- Bent or otherwise damaged standpipe; and
- Missing well identification number and/or marking.

3.2.4 *Subslab Venting System*

The elements associated with a properly functioning SSV system that are subject to inspection include the concrete slab, sealant, pipe vents, ventilators, intake inlets, and condensate vaults. Inspection of the SSV system components will include, but not be limited to, visual observations to determine the occurrence of the following items:

Concrete Slab

- Cracks;
- Settlement;
- Holes; and
- Staining.

Sealant (components consisting of epoxy or other sealant)

- Sealant integrity;
- Concrete slab;
- Pipe penetrations through the floor or wall;
- Corners;
- Holes; and
- Pipes.

Pipe Vents

- Cracks;
- Integrity of the connections to the structure;
- Integrity of the fittings; and
- Plumb alignment.

Ventilators

- Cracks;
- Clogged;
- Ability to spin freely; and
- Attached to the vertical pipe vent appropriately.

Intake Inlets

- Clogged grate;
- Integrity of the grate;
- Cracks;
- Integrity of the connections to the structure;
- Integrity of the fittings; and
- Plumb alignment.

Vault

- Lid opens/closes appropriately;
- Cracks;
- Lock is present, if required;
- Ponding; and
- Accumulation of condensate or other liquids in horizontal pipe or vault.

3.2.5 Site Security

Inspection of the Site security features will include, but not be limited to, the following items:

- Locks - functioning properly or damaged or missing;
- Fencing - General conditions, corrosion and/or damage and signs of unauthorized entry; and
- Signs - Damaged or missing warning signs.

3.3 REPAIRS AND MAINTENANCE

Maintenance will include any necessary repairs to any of the observed inspection items above, as noted during the inspection. Following the discovery of areas requiring maintenance or repairs during the Site inspection, or at any other time, the situation will be assessed and appropriate response actions will be initiated within 30 days of the observance (weather permitting). Maintenance methodology and results will be recorded in the inspection form as follow-up documentation.

The following sections describe typical preventative and corrective maintenance measures.

3.3.1 *Repair of Erosion or Cracking of Engineered Cover*

The cover system has been designed to prevent erosion of the final cover through the maintenance of an asphalt cover. Eroded portions of the cover system, or those areas where non-routine surface cracking has occurred (cracking that is resulting in development of larger erosion rills or other cover impacts), will be repaired promptly through the replacement of compatible soil fill material and/or asphalt patch. The repaired area will conform to the final grades established during the remedial construction, and will be maintained to prevent further degradation.

3.3.2 *Repair of Settlement Depressions*

Settlement depressions in the cover system will be repaired promptly upon discovery. Repairs will likely include regrading, addition of fill material, and/or asphalt patch to prevent the ponding of water on top of the cover.

3.3.3 *Repair to Landscaped Areas*

Bare areas greater than four square feet will be re-seeded or sodded. Eroded channels greater than six inches deep will be repaired and re-seeded or sodded. Large, woody growth and large non-native invasive species will be removed. Periodic mowing of the grass will be performed.

3.3.4 *Repair to Monitoring Wells*

Routine repairs to monitoring wells will include replacement locks, relabeling, unburying well pads, installing new well pads, installing new plugs and outer locking caps, extending wells to stick-ups, replacing protective/outer casing, and installing or replacing bollards to protect wells located adjacent to active roads. Significant repairs may include monitoring well replacement and/or abandonment which would need to be performed under the direction of a licensed well driller.

3.3.5 *Repair of Subslab Venting System*

Should any system components fail, the components will need to be replaced immediately upon discovery of malfunction. During repair, operations should occur as such not to breach the barrier. Significant repairs should be performed by a suitable contractor.

3.3.6 *Repair of Security Controls*

Security control devices including gates, locks, fences and signs will be promptly repaired or replaced, as necessary.

3.4 *HEALTH AND SAFETY*

Inspection and routine maintenance activities shall be conducted in accordance with a comprehensive, project-specific health and safety plan (HASP). The HASP serves as a routine guide and resource to assist in managing both day-to-day operational activities and emergency situations that may occur at the Site. The HASP addresses regulatory requirements of the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) and the USEPA as they relate to operational maintenance activities. Field work will be conducted in accordance with the HASP in a manner to minimize the probability of a near miss, equipment and property damage, and personal injury. Prior to initiating Site work, each field team member will review the HASP and sign the HASP Certification. Field activities will be implemented in USEPA Level D protection in accordance with FMC's site-specific requirements (i.e., hard hat, safety glasses, steel-toed boots, gloves, long sleeves, high visibility vest or clothing).

3.5 *EQUIPMENT*

Equipment that is anticipated to be used during the inspection and routine maintenance activities includes:

- Earthwork equipment (e.g., skid steer, backhoe);
- Seed spreader;
- Hand tools (e.g., screw driver, etc.); and
- Vegetation and brush clearing equipment.

4.0 *NON-ROUTINE MAINTENANCE*

This section outlines the procedures for non-routine maintenance of the cap, landscaped areas, monitoring wells, vegetation, SSV system, and security. Non-routine maintenance activities may include major repair and/or replacement of the system components resulting from damage or facility modifications. Any non-routine maintenance work that could cause potential exposure to impacted soils or ground water will be conducted under procedures outlined in the Soil Management Plan (SMP; ERM, 2010).

The following practices should be followed in the event of non-routine maintenance:

- Soils underneath the cap should not remain exposed for more than 30 days during the course of maintenance activities;
- If soils underneath the cap are to be exposed during any facility construction or maintenance activity, immediate notification will be made to the Site owner and any other party required by deed restriction or other instrument attached to the property. Furthermore, excavation, drilling and other activities will take place with caution and appropriate personal protective equipment will be worn by Site workers to prevent direct contact with soils and/or ground water. Depending on weather conditions, misting of the exposed area as dust control may be necessary;
- All work will be completed by a qualified contractor having experience with similar material/activities; and
- Modifications to the cap need to be consistent with the design set forth in the CMI Work Plan and reviewed and approved by FMC.

5.0 DOCUMENTATION AND REPORTING

Inspection reports and subsequent follow-up documentation will be maintained by developer or FMC's designated contractor, and will document all activities performed on-site during the operation and maintenance period. The inspection reports will be maintained at the Site and will be available for inspection by USEPA and MDE. A record of persons entering the Site to observe, inspect, maintain, repair, or otherwise conduct Site activities will also be kept in the Site activities log. At least one copy of each required report or document will be kept on-file at the Site (or other designated location).

Inspections will be performed on a quarterly basis for the first two years and semi-annually thereafter for the SSV system. The cap, landscaped area, monitoring wells, vegetation and security will be monitored on an annual basis, or as needed. The inspections will be documented in letter reports or on checklists including the information as listed in Attachment A.

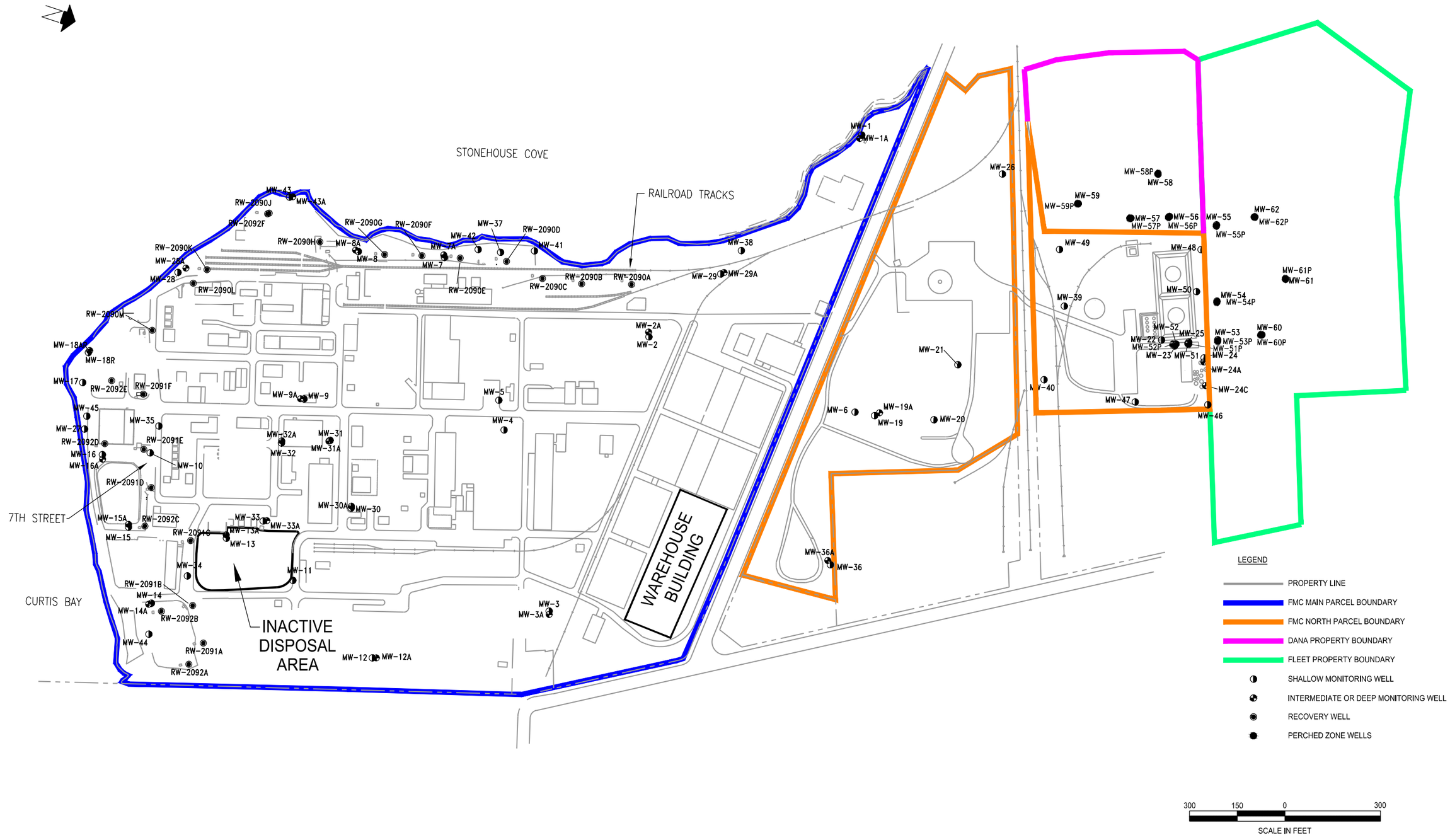
Routine reports summarizing operation and maintenance activities for the engineered cover, landscaped area, monitoring wells, vegetation and security will be prepared on an annual basis and retained on-Site for inspection by USEPA, if requested. The reports will contain the results of the inspections, monitoring, maintenance and repairs, if any, that occurred during the previous period, any updates to the O&M Plan, and any data collection or sampling results.

REFERENCES

Environmental Resources Management (ERM). 2010. Soil Management Plan. Former Agricultural Products Group Facility, Baltimore, Maryland. Prepared for FMC Corporation, dated 21 July 2010.

FIGURES

FIGURE 1
SITE PLAN
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



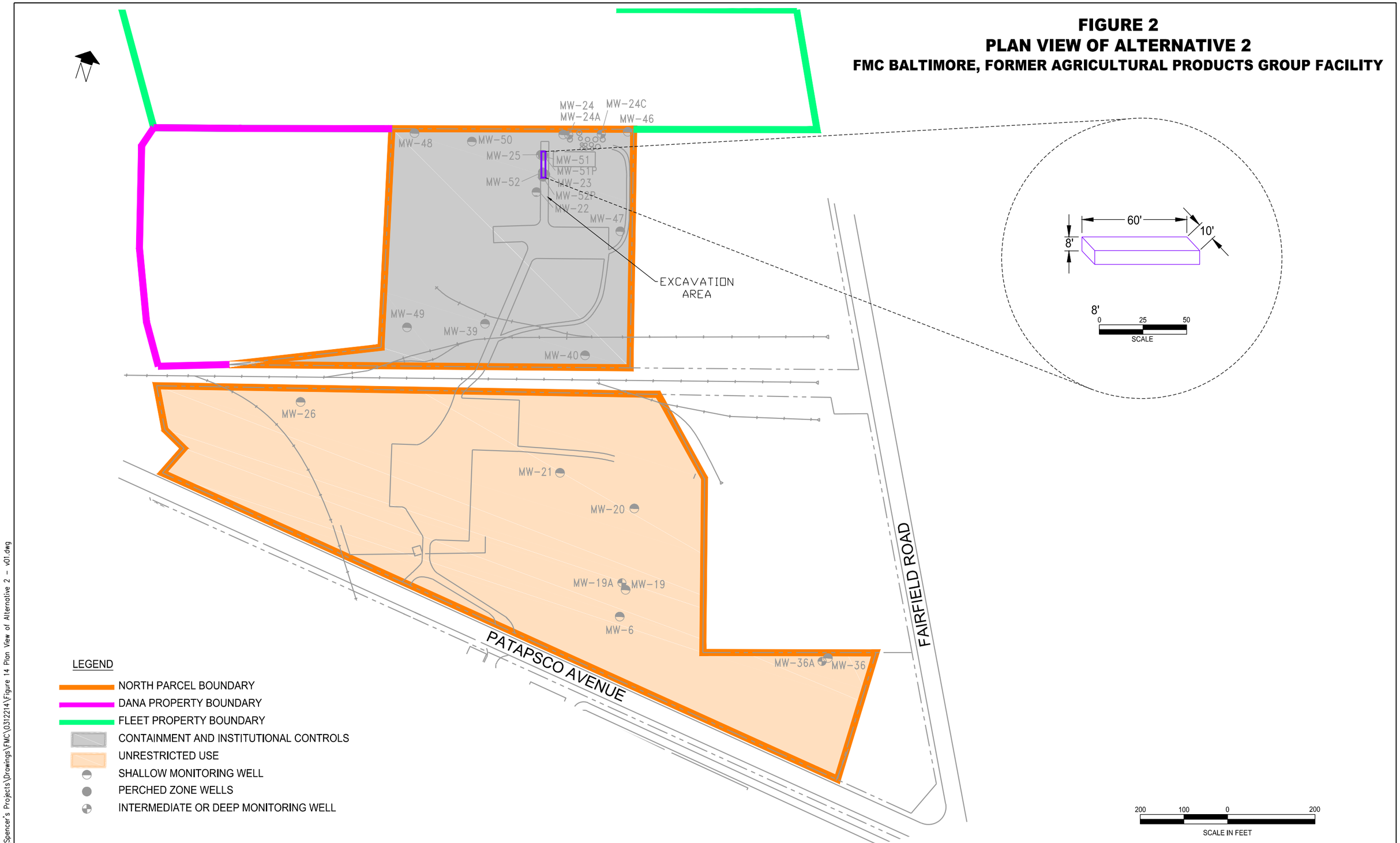
ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

N:\Projects\Spencer's Projects\Drawings-2013\FMC Baltimore\0176466\Figure 1 Site Plan.dwg

SR/EMF - 12/23/15

ERM, INC.

FIGURE 2
PLAN VIEW OF ALTERNATIVE 2
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

W:\Spencer's Projects\Drawings\FMC\031214\Figure 14 Plan View of Alternative 2 - v01.dwg

EMF - 10/18/16

ERM, INC.

ATTACHMENT A – INSPECTION REPORT FORMS

LANDSCAPE/VEGETATION INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:
Weather Conditions:	
General Landscaping Description:	

General Landscape Condition	☐ Exists ☐ Sound ☐ Erosion ☐ Root Intrusion ☐ Healthy Plant Condition ☐ Signs of Mortality ☐ Animal Burrows Comments:
Ground Cover	☐ Dry ☐ Damp ☐ Wet Comments:
Trees	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments:
Shrubs	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments:
Erosion	☐ Exists ☐ Slight ☐ Moderate ☐ Significant Comments:
Holes	☐ Exists ☐ Depth of Holes: Comments:

LANDSCAPE/VEGETATION INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland
Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Work Completed By: Date: Signature:

PAVEMENT INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:

Weather Conditions:

General Pavement Conditions:

PAVEMENT CONDITION INDEX (PCI)

	PCI	Characterization	Description
	1	New crack-free surface	Smooth texture
	2	Oxidation has started	Short hairline cracks start to develop
	3	Oxidation in advanced state	Hairline cracks are longer and wider
Maintenance Required	4	Oxidation complete	Crack area is 0.25 inches wide and crack lines have found base faults
	5	Moisture penetrating through 0.25 inch cracks. Loose material, stone	Texture of surface becoming rough. Preventative maintenance.
	6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines.
	7	Potholes develop in low spots	Gatoring areas begin to break up. Overall texture very rough.
	8	Potholes developing	Pavement breaking up
	9	Heaving due to excessive moisture in base	Distorts entire surface
	10	General breakup of surface	

PAVEMENT INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland
Curb Condition	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments:
Sidewalk Condition	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments:
Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Work Completed By: Date: Signature:

SUBSLAB VENTING SYSTEM INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:

Weather Conditions:

General System Conditions:

Concrete Slab	☐ Cracks ☐ Holes ☐ Subsidence ☐ Staining Comments:
Sealant	☐ Integrity ☐ Concrete Slab ☐ Pipe Penetrations ☐ Corners ☐ Holes ☐ Pipes Comments:
Pipe Vents	☐ Cracks ☐ Connections Integrity ☐ Fittings Integrity ☐ Plumb Alignment ☐ Roof/Wall Penetrations Comments:
Ventilators	☐ Cracks ☐ Clogging ☐ Spin Freely ☐ Attached/Detached from vertical Pipes Comments:
Intake Inlets	☐ Clogged Grate ☐ Grate Integrity ☐ Cracks ☐ Pipes, Fittings, Connections Integrity ☐ Plumb Alignment Comments:
Vault	☐ Missing/Broken Lock ☐ Lid Opens/Shuts ☐ Ponding ☐ Condensate Accumulation in Pipe ☐ Inside Gravel Integrity Comments:

SUBSLAB VENTING SYSTEM INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland
Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Date: Inspector Name (Print): Inspector Signature: Conditions Reported To:

MONITORING WELL & SECURITY INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:
Weather Conditions:	
General Conditions:	

Monitoring Wells	☐ Caps/Locks Missing ☐ Bolts Intact ☐ Casing Damage ☐ Damaged Well Pad ☐ Missing Well ID Number/Marking Comments:
Security	☐ Locks Functioning ☐ Locks Damaged/Missing ☐ Signs Missing/Damaged ☐ Signs Intact/Quality ☐ Fencing Condition (Holes, Damage, Corrosion) Comments:

MONITORING WELL & SECURITY INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Date: Inspector Name (Print): Inspector Signature: Conditions Reported To:

FMC Corporation

Appendix D

Ground Water Monitoring Plan for the North Parcel

Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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ATTACHMENTS

A MONITORING WELL AND SECURITY INSPECTION FORM

B MDE WELL ABANDONMENT FORM

C ALTERNATE SAMPLING METHODS

LIST OF ACRONYMS

CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DO	Dissolved Oxygen
DQO	Data Quality Objective
ERM	Environmental Resources Management
FDRTC	Final Decision and Response to Comments
FMC	FMC Corporation
GWMP	Ground Water Monitoring Plan
HASP	Health and Safety Plan
MCL	Maximum Concentration Level
mL/min	Milliliter per Minute
mV	Millivolts
NAPL	Non-Aqueous Phase Liquid
ORP	Oxidation/Reduction Potential
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Levels
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Ground Water Monitoring Plan (GWMP) for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC property at 1600 East Patapsco Avenue, Baltimore, Maryland. This GWMP addresses the presence of volatile organic compounds (VOCs) in ground water on the North Parcel and two adjacent off-site properties. The North Parcel (1600 East Patapsco Avenue) consists of the approximately 23-acre portion of the 90-acre property (Site) north of the 67-acre former Main Plant (1701 East Patapsco Avenue) (Figure 1). This GWMP is considered to be a 90 percent design submittal and once approved by USEPA will be finalized to the 100 percent level and implemented.

Corrective measures for the North Parcel were developed in accordance with:

- USEPA's Region III Final Decision and Response to Comments (FDRTC) issued on 14 April 2011 (USEPA, 2011); and
- Section II.B.1 of USEPA's Resource Conservation and Recovery Act (RCRA) Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) issued on 30 January 2013 (USEPA, 2013).

The FDRTC requires that Site-related ground water contamination be controlled to prevent migration onto Site-adjacent properties at unacceptable concentrations (USEPA, 2011). The Corrective Measures Study (CMS) report for the North Parcel was written to be consistent with the remedial objective identified in the FDRTC, and long-term monitoring was selected as part of the remedy for ground water conditions on the North Parcel and off-site properties.

1.1 BACKGROUND

Two alternatives were discussed in the USEPA-approved CMS for the North Parcel (ERM, 2016). Alternative 2, which was proposed by FMC and approved by USEPA, includes the following corrective measures:

- Removal and disposal of the source area, consisting of removal of non-aqueous phase liquid (NAPL)-impacted soils;
- Placement of a low permeability cover (i.e., asphalt cap) on the six-acre northern portion of the North Parcel to reduce infiltration of rain water into the subsurface;
- Long-term ground water monitoring of select on-site and off-site wells; and
- On-site and off-site institutional controls.

Historical ground water quality data for the North Parcel and surrounding off-site wells was presented in the CMS, and was also summarized in the *Supplemental Site Investigation Report for the North Parcel* dated 20 October 2014. Table 1 presents historical ground water quality data for samples collected from the wells at the North Parcel and surrounding off-site properties.

1.2 PURPOSE

The purpose of the long-term monitoring is to monitor changes in ground water quality in the perched and shallow water tables over time. Long-term monitoring will consist of annual ground water sampling of an on-site and off-site monitoring well network.

This long-term ground water monitoring plan includes the following:

- Identification of the long-term ground water monitoring well network for the North Parcel, Dana property, and Fleet property (Figure 1);
- The proposed annual frequency of sample collection and the procedures to be used to collect and analyze ground water samples;
- Quality Assurance/Quality Control (QA/QC) procedures associated with collection of the ground water samples from the monitoring wells; and
- Description of the data analysis and reporting.

1.3 ORGANIZATION

The remainder of this long-term monitoring plan is organized as follows:

- Section 2 – Sample Collection and Analysis. This section identifies the water level monitoring network and water level measurements. In addition, the section describes the procedures for the collection and analysis of ground water quality samples to monitor ground water quality on the North Parcel.
- Section 3 – Quality Assurance Project Plan. This section includes the QA/QC procedures for the monitoring program.
- Section 4 – Data Evaluation and Reporting. This section describes the methods to evaluate and report the water level and ground water quality data.
- Section 5 – Project Management. This section describes the roles and responsibilities of the parties, schedule and health and safety considerations for implementing the ground water monitoring.

2.0 SAMPLE COLLECTION AND ANALYSIS

2.1 MONITORING WELL NETWORK

The ground water monitoring system will consist of select ground water monitoring wells located on the North Parcel, Dana property, and Fleet property. The condition of the monitoring wells to be retained for the long-term monitoring program will be inspected, and the results of the inspection will be recorded on the Monitoring Well and Security Inspection form included in Attachment A. Repairs to the monitoring well network will be made as necessary. This form will be filled in each year during the annual monitoring event to determine if well repairs are necessary.

2.1.1 *Ground Water Quality*

A total of 22 wells have been identified for ground water quality monitoring; six wells in the perched zone, fourteen wells in the shallow zone, and two wells in the intermediate zone. The monitoring well network for ground water quality monitoring is listed below. Figure 1 shows the locations of the wells proposed for inclusion in the ground water quality monitoring program. Table 2 presents the well construction details.

Perched Wells	Shallow Wells	Intermediate Wells
MW-51P, 53P, 54P, 55P, 56P, 57P	MW-20, 24, 25, 26, 36, 39, 40, 48, 50, 55, 56, 57, 59, 60	MW-24A, 24C

The wells listed above will effectively monitor changes in ground water quality on the North Parcel and two off-site properties in both the perched and shallow flow zones. Most of the wells are located downgradient of and/or radially surround the source zone area, and are within the footprint of the chlorobenzene plume.

2.1.2 *Water Level Monitoring*

A total of 33 wells have been identified for ground water elevation monitoring; ten wells in the perched zone, 19 wells in the shallow zone, and two wells in the intermediate zone. The monitoring well network for water level monitoring is listed below. Figure 1 shows the locations of the wells proposed for inclusion in the ground water level monitoring program. Table 2 presents the well

construction details. Figures 2 and 3 present the ground water flow contours for the perched and shallow flow zones, respectively.

Perched Wells	Shallow Wells	Intermediate Wells
MW-51P, 53P, 54P, 55P, 56P, 57P, 59P, 60P, 61P, 62P	MW-20, 24, 25, 26, 36, 39, 40, 46, 47, 48, 49, 50, 53, 54, 55, 56, 57, 59, 60, 61, 62	MW-24A, 24C

2.1.3 *Monitoring Well, Temporary Piezometer, and Injection Well Abandonment*

Table 3 lists the monitoring wells, temporary piezometers, and injection wells proposed for abandonment. Wells and/or piezometers located within the excavation area will be removed.

Well abandonment will be conducted in accordance with MDE's well abandonment regulations (COMAR 26.04.04.34). In summary, well abandonment will be conducted using the following methods:

- Wells will abandoned and/or sealed by a well driller licensed by the Maryland State Board of Well Drillers;
- A Water Well Abandonment Sealing Report (Attachment B) will be completed for submittal not later than 45 days after abandonment and sealing of the well;
- The surface casing will be removed and the PVC casing will be cut off at the ground surface if the casing cannot be pulled out;
- The annular and/or interior space will be sealed so that it will not act as a channel for interchange of waters;
- Prior to sealing the well it should be inspected to determine its condition and to determine if any obstructions are present that would interfere with sealing the well;
- Suitable materials for sealing a well include concrete, neat Portland cement grout, a mixture of Portland cement and sand, and bentonite;
- If the well casing is not removed, the well shall be filled with sealing material; and
- If the well casing is removed, the entire length of the borehole shall be filled with sealing material.

2.2 *SYNOPTIC GROUND WATER ELEVATIONS*

Synoptic water level measurements will be obtained from the wells listed in Section 2.1.2 at the start of the sampling event to determine the ground water flow direction and hydraulic gradient. Water levels will be measured using a water level meter. The measurements will be collected to the nearest 0.01 foot relative to the top of the well casing.

2.3 *WELL PURGING AND SAMPLING*

Ground water samples will be collected annually from the list of wells presented in Section 2.1.1. Purging of monitoring wells will be performed following the soda straw method (USEPA, SESDPROC-301-R3, March 6, 2013a, Page 26) and the USEPA low-flow ground water sampling procedures (USEPA, 1996). The procedures for low-flow purging and sampling to be used for all monitoring wells is as follows:

<u>Peristaltic Pumps</u>

1. Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.

2. Polyethylene tubing will be used to purge the wells. The tubing will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.

3. When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 milliliters per minute (mL/min)) in order to minimize disturbance of the water column.

4. The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.1 meters of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.1 meters, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.1 meters when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low-flow/minimum drawdown protocol.

5. When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval to begin with.

6. Using a flow-through cell, measurements of field parameters [pH, temperature, conductivity, oxidation-reduction potential (ORP), turbidity and dissolved oxygen (DO)] will be collected at 5 minute intervals during purging of the monitoring well, until stabilization occurs. The flow cell may be emptied as necessary to prevent turbidity build-up in the flow cell.

7. Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
    - +0.1 units for pH;
    - +10% for temperature;
    - + 3% for conductivity;
    - +10 millivolts (mV) for ORP; and
    - +10% for turbidity and DO.

8. Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter, but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case that the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then all samples but VOCs will be collected at that time.

9. VOCs will be sampled using the Soda Straw Method. Tubing will be allowed to fill using the peristaltic pump, the pump speed will be reduced, and then the flow is reversed to push the water out of the tubing. The tubing is brought to the surface and the water in the tubing is allowed to fill the VOA vials. Avoid completely filling the tubing to avoid contact with the flexible pump head tubing. The method will be repeated until all the VOC's sample containers are filled.

<u>Submersible Pumps</u>

1. Prior to purging, the depth to water in the well will be measured to the nearest 0.01 feet.

2. A low-flow submersible pump and polyethylene tubing will be used to purge the wells. The pump will be lowered slowly into the well, with the intake placed in the middle of the saturated or open screen interval.

3. When beginning to purge, the pump rate will be operated at its lowest setting (i.e., 100 mL/min) in order to minimize disturbance of the water column.

4. The depth to water will be measured frequently (e.g., every minute for the first few minutes, and every 5 minutes thereafter) to ensure that less than 0.1 meters of drawdown occurs. The pumping rate may be increased if drawdown is less than 0.1 meters, but the pumping rate will not exceed 500 mL/min. In some silty and/or clayey formations, drawdown may exceed 0.1 meters when pumping at 100 mL/min. If this occurs, refer to the next section for alternatives to the low-flow/minimum drawdown protocol.

5. When purging the monitoring well, the water level will not be allowed to drop below the screened interval unless the static water level is below the top of the screened interval to begin with.

6. Using a flow-through cell, measurements of field parameters [pH, temperature, conductivity, ORP, turbidity and DO] will be collected at 5 minute intervals during purging of the monitoring well, until stabilization occurs. The flow cell may be emptied as necessary to prevent turbidity build-up in the flow cell.

7. Stabilization will be deemed to have occurred when three consecutive readings of parameters are within the levels specified below:
    - +0.1 units for pH;
    - +10% for temperature;
    - + 3% for conductivity;
    - +10 mV for ORP; and
    - +10% for turbidity and DO.

8. Dissolved oxygen and turbidity tend to stabilize last and are better measures of sufficient purging. Turbidity is generally not a required parameter, but can be recorded as a stabilization parameter. Samples will be collected after stabilization has occurred, from a discharge location prior to the flow-through cell. In the case that the above criteria for stabilization are not met before three well volumes have been pumped, then a total of five well volumes will be pumped before samples are taken. If, at any time during this additional purging the stabilization criteria are met for three consecutive data logging events, then samples will be collected at that time.

Alternate Sampling Methods

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.1 m of drawdown. In these cases, a modified low flow method (depending on the water level in relation to the well screen) would be utilized as presented in Attachment C.

2.4 *SAMPLE ANALYSIS*

The ground water samples will be submitted to the laboratory for analysis of the target compound list (TCL) VOCs via EPA Method 8260 as identified in Table 4. Table 5 summarizes the number of proposed samples, including QA/QC samples, and the field and laboratory analysis.

2.5 *FIELD DECONTAMINATION*

All non-dedicated sampling equipment will be cleaned after each use with a non-phosphate detergent/tap water solution, rinsing with tap water, followed by a distilled or deionized water rinse.

All non-dedicated purging and sampling equipment will be decontaminated in the field prior to beginning purging and sampling activities, after use in each well, and prior to leaving the Site. Purging and sampling equipment will be decontaminated using an alconox wash and a distilled water rinse.

Submersible pumps will be decontaminated by pumping or by breaking down the pump and cleaning the interior of the pump with a decontamination solution. If an alconox solution is pumped through the pump, the outside of the pump will then be cleaned and scrubbed with a bristle brush and then the pump rinsed with a distilled water rinse. If the pump is broken down, the interior and the exterior of the pump will be sprayed with an alconox wash and then scrubbed with a bristle brush. The pump will then be rinsed with distilled water.

2.6 *MANAGEMENT OF INVESTIGATION-DERIVED WASTE*

Water generated during purging and decontamination fluids will be contained and placed into the on-site ground water treatment plant for treatment.

Any disposable equipment or equipment that cannot be decontaminated or is designated for one-time use (e.g., tubing) will be disposed in the general trash.

2.7 *MANAGEMENT OF SAMPLING RECORDS AND FIELD DATA*

The field sampling team is responsible for maintaining records and notes of all activities. A field notebook shall be maintained by the sampling team describing all sampling activities and observations. This includes, but is not limited to field equipment calibration, description of all samples collected, field screening results and measurements, date and time of sampling and purging activities, any Site visitors, any problems or downtime, and date and time of sample delivery to the laboratory. Each entry in the book should be made in indelible ink. If an error is made, it is to be lined through, initialed and dated and the correct entry made. At the end of the day, or when a field notebook changes between members of the sampling team, it is to be noted and signed. In addition, field sheets will be utilized to record purging activities and measurements at each monitoring well.

2.8 *SAMPLE HANDLING AND SHIPMENT*

Sample containers will be obtained directly from the laboratory. Immediately after collecting each sample, the sample container will be labeled, sealed in an individual plastic bag, and placed into an insulated cooler containing ice. Chain-of-custody forms will accompany the samples inside the cooler for delivery to the off-site laboratory. A sampling team member will indicate relinquishment of the samples on the chain-of-custody form, and these forms will be sealed in a "Ziploc" plastic bag or a laboratory supplied sample bag and inserted into the cooler before sealing the cooler for shipment. Each cooler will contain sufficient ice to ensure that the proper temperature is maintained during shipment, and will be packed in a manner to prevent damage to sample containers. Samples will be shipped via commercial delivery service for overnight delivery or courier to the off-site analytical laboratory.

The following information will be recorded on the chain-of-custody forms:

- Project name;
- Sample identification numbers;
- Sample type;
- Date and time of collection;
- Analyses to be performed and preservatives;
- Number of sample containers;
- Shipping method (carrier airbill number, if applicable);
- Name of recipient laboratory; and

- Signatures of parties relinquishing and receiving the sample cooler at each transfer point.

Custody of samples must be maintained and documented at all times. The sampling team will be responsible for ensuring that the chain-of-custody is maintained and each sample transfer is documented until the samples are shipped to the off-site laboratory.

Laboratory-supplied sample containers will be used. Sample containers will be stored in a locked and secure area. All necessary chemical preservatives will be added, as appropriate, to the bottles by the laboratory prior to shipping the sample containers. Preservative type and source will be documented in the sampling team field book.

The field team will affix a self-adhesive label to each container before collecting samples if a label is not already affixed to the laboratory-supplied sample container. At a minimum, the sample label will contain the following:

- Client – Project Name;
- Sample identification number;
- Date and time of sample collection;
- Sampler's initials;
- Analyses to be performed; and
- Preservatives added.

3.0 QUALITY ASSURANCE PROJECT PLAN

3.1 DATA QUALITY OBJECTIVES

The overall Data Quality Objective (DQO) for the long-term ground water sampling is to provide data of sufficient quality to determine whether VOCs are present in ground water using analytical methods specified herein. To meet this DQO, definitive quantitation of the concentrations of constituents in ground water by the analytical laboratory is needed for at least 95 percent of the samples. If quantitation for less than 95 percent of the samples is obtained, the project team will make a case-by-case determination as to whether additional samples will be collected and submitted for analysis to replace some or all of the samples that were compromised or consumed without usable data being generated.

3.2 *QUALITY ASSURANCE AND QUALITY CONTROL SAMPLES*

QA/QC samples will be collected and analyzed to verify that the data are acceptable. QA/QC samples will be collected at a rate of 1 per 20 samples during the ground water monitoring event. Table 5 lists the proposed number and types of QA/QC samples proposed for collection during each ground water monitoring event.

3.3 *REPORTING LIMITS*

Table 6 provides the reporting limits for water analysis that should be achieved for each of the parameters to be analyzed, and compares the reporting limits to the USEPA's Regional Screening Level (RSL) for tap water and the USEPA maximum concentration level (MCL) (USEPA, 2015). Although Table 6 indicates that in a few instances the reporting limits for selected VOCs are higher than the current USEPA screening level, reporting limits are sufficient for key contaminants, such as chlorobenzene. Additionally, the laboratory can report results to the method detection limit with the use of a "J" qualifier; method detection limits are generally five to ten times lower than the reporting limit. The reporting limits listed in Table 6 will be provided to the selected laboratory to make sure the reporting or method detection limits will be equal to or lower than those listed in Table 6.

4.0 *DATA ANALYSIS AND REPORTING*

Ground water monitoring reports will be prepared for submittal to USEPA. The report will summarize data collected, which will be compiled and evaluated. Additionally, the report will contain copies of the laboratory analytical reports, chain-of-custody forms, a brief discussion of the data evaluation, conclusions, and recommendations. In addition, ground water flow contour maps for the shallow and perched flow zones will be provided with each report.

5.0 *PROJECT MANAGEMENT*

5.1 *PROJECT TEAM*

Key roles of the team that will perform the work described herein are:

- FMC Corporation – FMC is responsible for performing long-term ground water monitoring. FMC is directly responsible for the implementation of the

long-term ground water sampling. The FMC Project Manager will be Mr. Brian McGinnis.

- Monitoring Contractor – Parsons will be responsible for implementing this plan, including the purging and sampling of the monitoring wells, shipping the samples to the off-site laboratory, and compiling and reporting the data. The monitoring contractor will report directly to FMC.
- Off-site Laboratory – The ground water samples will be analyzed by a qualified laboratory identified and selected by FMC or the monitoring contractor. The off-site laboratory will report directly to the monitoring contractor.

5.2 *HEALTH AND SAFETY*

FMC recognizes the need to ensure that the work is conducted safely and in accordance with the health and safety procedures established for the Site. During the implementation of the fieldwork described herein, there is the potential for chemical exposures to workers, as well as typical physical hazards associated with the Site work. The health and safety procedures that will be followed during the field investigation will be included in a project-specific Health and Safety Plan (HASP) that covers specific activities associated with ground water sampling. The HASP and any HASP Supplement(s) will conform to Occupational Safety and Health Administration (OSHA) and USEPA requirements including, but not limited to, 29 Code of Federal Regulations (CFR) 1910.120 (Federal Government of the United States, 2009).

5.3 *SCHEDULE*

Long-term ground water monitoring of the North Parcel will be conducted annually. Annual ground water quality monitoring will be initiated after USEPA approval of the Corrective Measures Implementation (CMI) Work Plan. The North Parcel annual sampling event will likely be conducted concurrent with the annual ground water quality sampling conducted on the main plant parcel. Ground water monitoring results will be summarized in a stand-alone report submitted to USEPA within 60 days of the completion of the sampling.

REFERENCES

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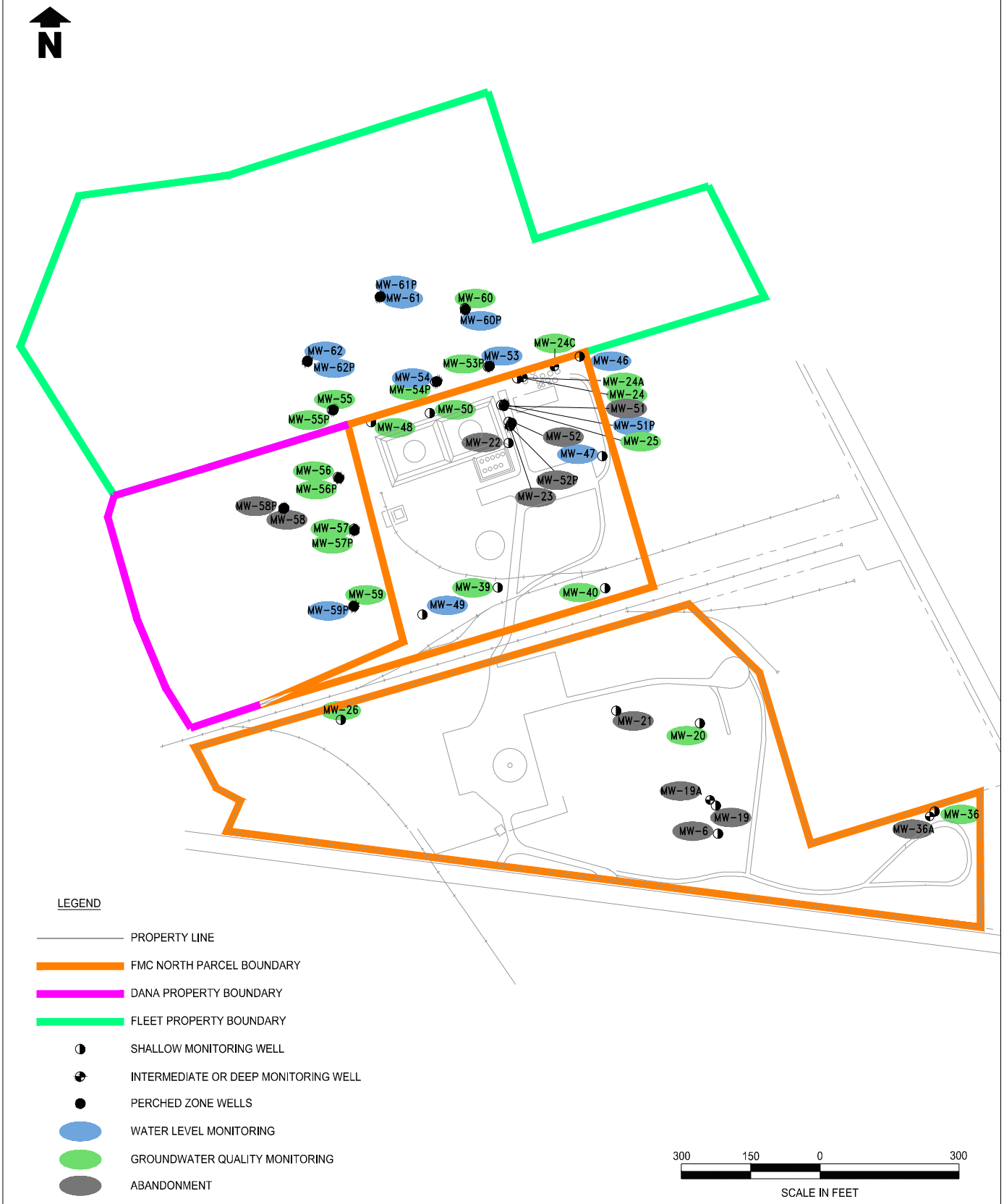
United States Environmental Protection Agency (USEPA). 2013. Permit for Corrective Action, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, January 30, 2013.

United States Environmental Protection Agency (USEPA). 2013a. Groundwater Sampling, SESDPROC-301-R3. Jonathan Vail. Region 4, USEPA, Science and Ecosystem Support Division. March 6, 2013, Page 26.

United States Environmental Protection Agency (USEPA). 2015. Regional Screening Levels RSLs. https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2015.

FIGURES

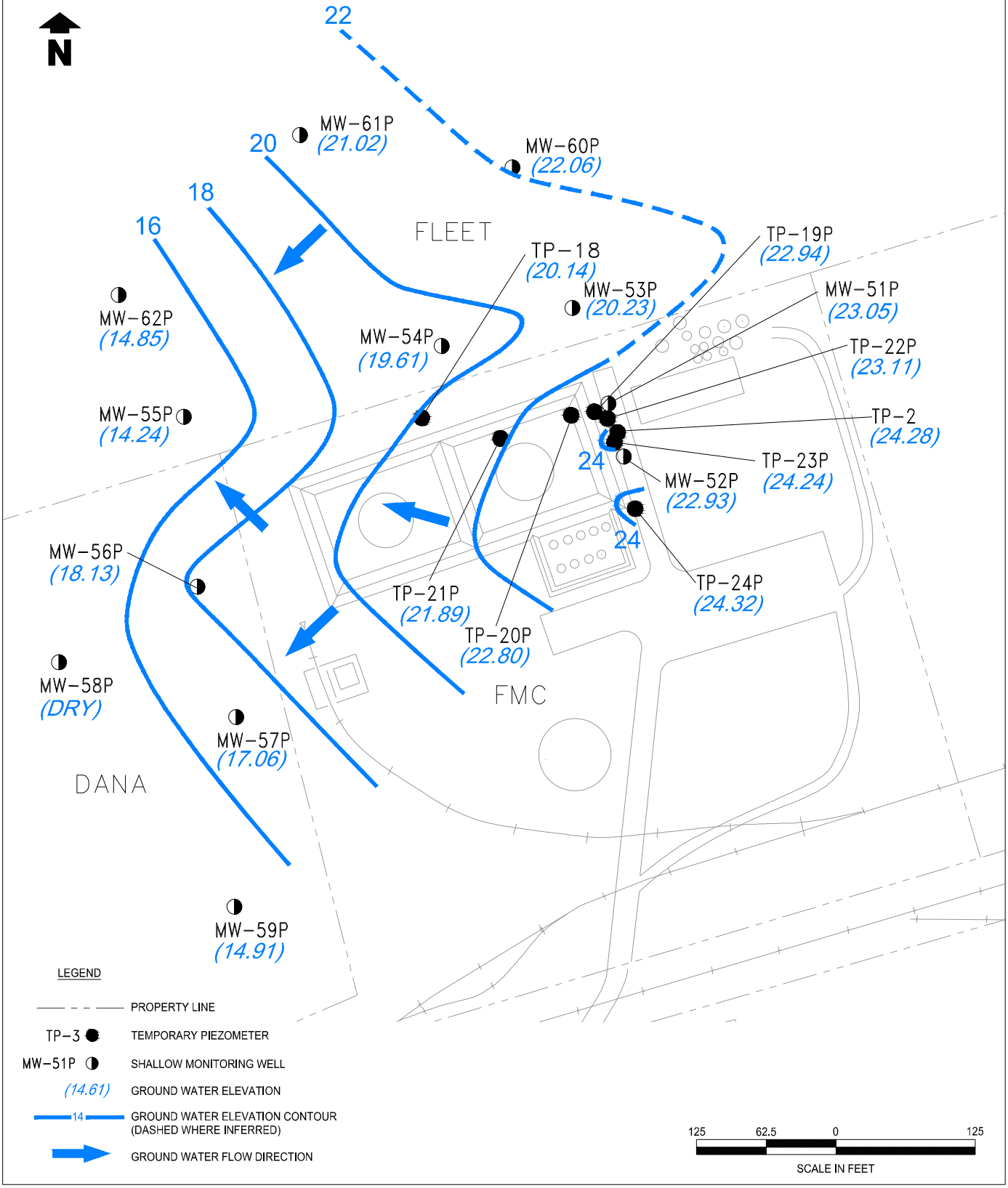
FIGURE 1
NORTH PARCEL GROUND WATER MONITORING PROGRAM
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

G:\CAD\Drawings-2014\FMC_Baltimore\0340126\Figure 1 Site Plan.dwg

FIGURE 2
PERCHED ZONE GROUND WATER CONTOUR MAP
4 SEPTEMBER 2012
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

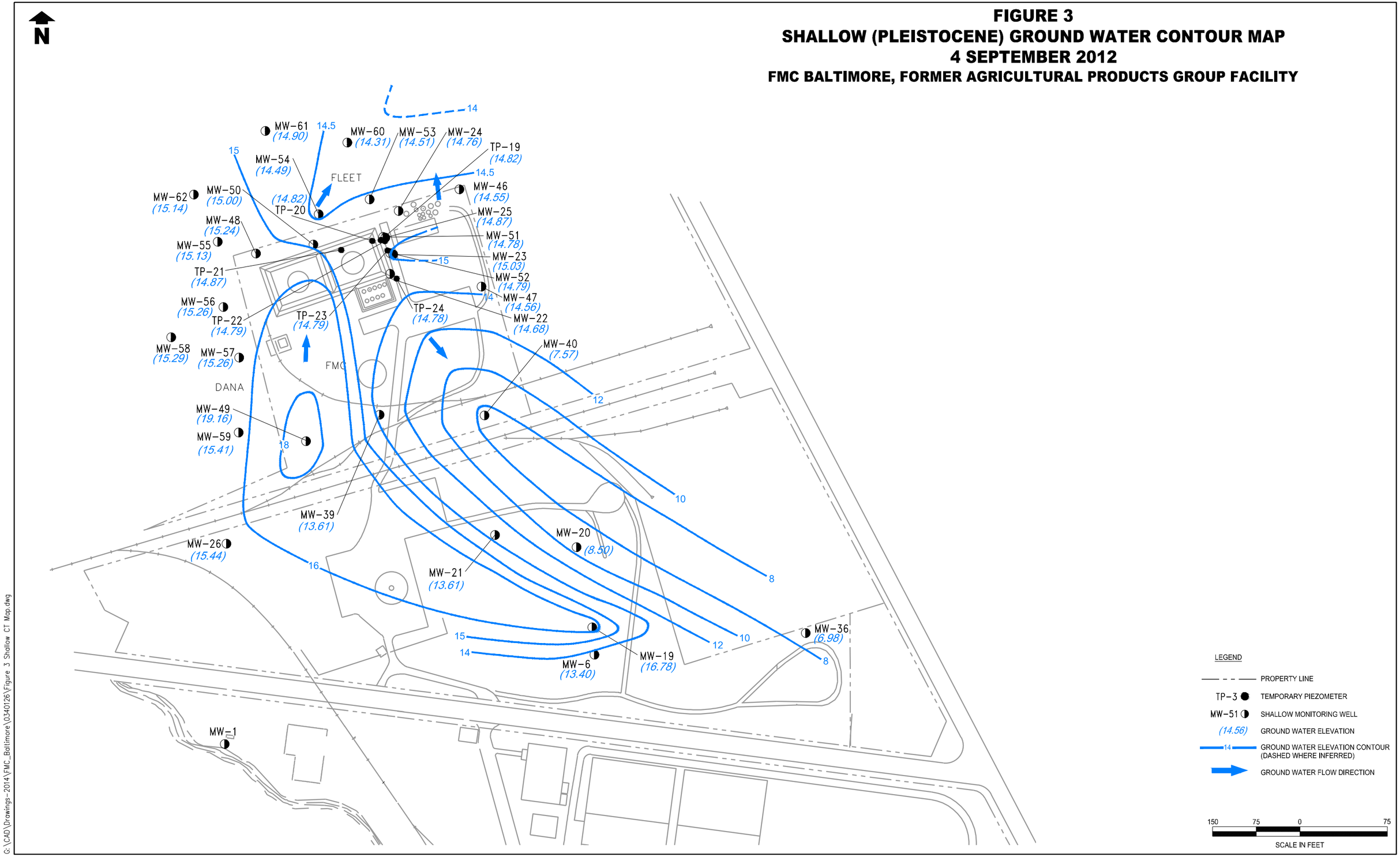


G:\CAD\Drawings-2014\FMC_Baltimore\0340126\Figure 7 Perched GW CT Map.dwg

PLS - 08-09-16

ERM, INC.

FIGURE 3
SHALLOW (PLEISTOCENE) GROUND WATER CONTOUR MAP
4 SEPTEMBER 2012
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



G:\CAD\Drawings-2014\FMC_Baltimore\0340126\Figure 3 Shallow CT Map.dwg

PLS - 08-09-16

ERM, INC.

TABLES

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID	MW-22	MW-23			MW-24	MW-25		MW-26	MW-40	MW-47
		Date	10/12/2011	10/12/2011	9/10/2012	9/10/12 (Dup)	9/10/2012	10/13/2011	9/10/2012	10/14/2011	10/11/2011	10/12/2011
		Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<1,000	**540 J**	**1,110 J**	**1,140 J**	<10	<10,000	**2,630**	NA	NA	<10 J
Benzene	0.45		**1,200**	**2,100**	**2,030**	**2,180**	**16.1**	**2,000**	**2,340**	**3.2**	<200	**100 J**
Bromodichloromethane	0.13		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1
2-Butanone	5,600		<1,000	<1,000	<50	<50	<10	<10,000	**54.2 J**	NA	NA	<10 J
Carbon disulfide	810		<1,000	<1,000	**1.8 J**	**1.7 J**	<1	<10,000	**14.9 J**	NA	NA	<10
Carbon tetrachloride	0.45		<100	<100	**8.9 J**	**9.6 J**	<1	<1,000	<1	NA	NA	<1
Chlorobenzene	78		**34,000**	**75,000**	**108,000**	**105,000**	**96.3**	**270,000**	**307,000**	**120**	**3,000**	**9.4 J**
Chloroform	0.22		<100	<100	**3.6 J**	**4.7 J**	<1	<1,000	**361 J**	<1	<200	<1 J
Chloromethane	190		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1
Dibromochloromethane	0.17		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1
1,1-Dichloroethane	2.7		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	**1.9 J**
1,2-Dichloroethane	0.17		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1 J
1,1-Dichloroethene	280		<100	<100	<5	<5	<1	<1,000	**7.2 J**	NA	NA	<1
cis-1,2-Dichloroethene	36		<100	<100	<5	<5	<1	<1,000 J	**2.4 J**	NA	NA	**3.7 J**
trans-1,2-Dichloroethene	360		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1
1,2-Dichloropropane	0.44		<100	<100	**52.7 J**	**57.3 J**	**2**	<1,000	**156 J**	NA	NA	<1 J
trans-1,3-Dichloropropene	0.47		<100	<100	<5	<5	<1	<1,000	<1	<1	<1	<1
Ethylbenzene	1.5		<100	<100	**13.1 J**	**14.7 J**	<1	<1,000	<1	<5	<200	<1 J
2-Hexanone	38		<1,000	<1,000	<50	<50	<10	<10,000	<10	NA	NA	<10
4-Methyl-2-pentanone	1,200		<50	<50	**11.5 J**	**13.8 J**	<10	<5,000	<10	NA	NA	<5
Methylene Chloride	11		<100	<100	**10.4 J**	**11.7 J**	<1	<1,000	**11 J**	<1	<1	<1
Styrene	1,200		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	<1
1,1,2,2-Tetrachloroethane	0.076		<100	<100	<5	<5	<1	<1,000	<1	<5	<200	<1
Tetrachloroethene	11		<100	<100	**2.8 J**	**3.4 J**	<1	<1,000	**9.8 J**	NA	NA	<1 J
Toluene	1,100		<100	**300**	**661 J**	**736 J**	<1	<1,000	**1,350**	NA	NA	<1 J
1,1,2-Trichloroethane	0.28		<100	<100	<5	<5	<1	<1,000	<1	<1	<1	<1
Trichloroethylene	0.49		<100	<100	**6.2 J**	**6.3 J**	<1	<1,000	<1	<1	<200	<1
Vinyl Chloride	0.019		<100	<100	<5	<5	<1	<1,000	<1	NA	NA	**3.7 J**
Xylene (total)	190		<300	<300	**72 J**	**83.8 J**	<3	<3,000	**693 J**	NA	NA	<3 J
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<5	<5	NA	NA	NA	<5	NA	NA	NA	<5
bis(2-Chloroethyl) ether	0.014		<5	<5	NA	NA	NA	<5	NA	NA	NA	**28**
2-Chlorophenol	91		<5	<5	NA	NA	NA	**3 J**	NA	<5	<5	<5
1,2-Dichlorobenzene	300		<100	<100	NA	NA	NA	<1,000	NA	<5	**8**	<1 J
1,3-Dichlorobenzene	---		<100	<100	NA	NA	NA	<1,000	NA	<5	<5	**0.84 J**
1,4-Dichlorobenzene	0.48		**74 J**	**89 J**	NA	NA	NA	<1,000	NA	**3 J**	**50**	**8.7 J**
Naphthalene	0.17		<5	<5	NA	NA	NA	<5	NA	NA	NA	<5
2-Nitrophenol	---		<5	<5	NA	NA	NA	<5	NA	<5	<5	<5
4-Nitrophenol	---		<5	<5	NA	NA	NA	<5 J	NA	NA	NA	<5
Phenol	5,800		<5	<5	NA	NA	NA	<5	NA	<5	<5	<5

NOTES:

EPA - United States Environmental Protection Agency.
[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as estimated.
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits exceed EPA screening criteria.
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are possibly biased low.
--- - No EPA Screening Level currently exists for this analyte.

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID	MW-48			MW-50		MW-51	MW-51P	MW-53	
		Date	10/10/2011	10/10/2011 (Dup)	9/10/2012	10/12/2011	9/7/2012	10/13/2011	10/14/2011	10/11/2011[2]	9/6/2012 (MS/MSD)
		Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Volatile Organic Compounds (µg/l)											
Acetone	14,000		<2,000 J	<2,000 J	**131 J**	<10,000	**197 J**	<1,000	<1,000	<200	<10 J
Benzene	0.45		**830 J**	**860**	**1,290**	**2,600**	**2,190**	**200**	**390**	**16 J**	**1.7 J**
Bromodichloromethane	0.13		<200	<200	<1	<1,000	**20 J**	<100	<100	<20	<1 J
2-Butanone	5,600		<2,000	<2,000	<10	<10,000	<1	<1,000	<1,000	<200 J	<10 J
Carbon disulfide	810		<2,000	<2,000	**0.71 J**	<10,000	**22 J**	<1,000	<1,000	<200	<1 J
Carbon tetrachloride	0.45		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
Chlorobenzene	78		**82,000 EJ**	**84,000 EJ**	**79,000**	**110,000**	**112,000**	**26,000**	**32,000**	**470 J**	**605 J**
Chloroform	0.22		<200	<200	**10.5 J**	<1,000	**3.5 J**	<100	<100	<20	<1 J
Chloromethane	190		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
Dibromochloromethane	0.17		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
1,1-Dichloroethane	2.7		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
1,2-Dichloroethane	0.17		<200	<200	<1	<1,000	**1.8 J**	<100	<100	<20	<1 J
1,1-Dichloroethene	280		<200	<200	<1	<1,000	**1.4 J**	<100	<100	<20	<1 J
cis-1,2-Dichloroethene	36		<200	<200	<1	<1,000	**1.2 J**	<100	<100	<20 J	<1 J
trans-1,2-Dichloroethene	360		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
1,2-Dichloropropane	0.44		<200	<200	**53.2 J**	<1,000	**163 J**	<100	<100	<20	**2.4 J**
trans-1,3-Dichloropropene	0.47		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
Ethylbenzene	1.5		**330 J**	**360**	**86.6 J**	<1,000	**20.9 J**	<100	<100	<20	<1 J
2-Hexanone	38		<2,000	<2,000	<10	<10,000	<10	<1,000	<1,000	<200	<10 J
4-Methyl-2-pentanone	1,200		<1,000	<1,000	<10	<5,000	<10	<500	<500	<100	<10 J
Methylene Chloride	11		<200	<200	<1	<1,000	**2.5 J**	<100	<100	<20	<1 J
Styrene	1,200		<200	<200	**52.1 J**	<1,000	<1	<100	<100	<20	<1 J
1,1,2,2-Tetrachloroethane	0.076		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
Tetrachloroethene	11		<200	<200	**6.9 J**	<1,000	**33.8 J**	<100	<100	<20	<1 J
Toluene	1,100		**1,700 J**	**1,500**	**1,120**	<1,000	**174**	<100	**72 J**	<20	<1 J
1,1,2-Trichloroethane	0.28		<200	<200	<1	<1,000	<1	<100	<100	<20	<1 J
Trichloroethylene	0.49		<200	<200	**2.9 J**	<1,000	**6.6 J**	<100	<100	<20	<1 J
Vinyl Chloride	0.019		<200	<200	<1	<1,000	**0.54 J**	<100	<100	<20	<1 J
Xylene (total)	190		**1,870 J**	**1,880**	**908**	<3,000	**317 J**	<300	<300	<60	<3 J
Semi-Volatile Organic Compounds (µg/l)											
Caprolactam	9,900		<5 J	<5 J	NA	<5	NA	NA	NA	<5	NA
bis(2-Chloroethyl) ether	0.014		<5 J	<5 J	NA	<5	NA	NA	NA	<5	NA
2-Chlorophenol	91		<5	<5	NA	**6.9**	NA	NA	NA	<5	NA
1,2-Dichlorobenzene	300		**260 J**	**260**	NA	<1,000	NA	NA	NA	<20	NA
1,3-Dichlorobenzene	---		<200	<200	NA	<1,000	NA	NA	NA	<20	NA
1,4-Dichlorobenzene	0.48		**1,300 J**	**1,400**	NA	<1,000	NA	NA	NA	<20	NA
Naphthalene	0.17		**5.3 J**	<5 J	NA	<5	NA	NA	NA	<5	NA
2-Nitrophenol	---		<5	<5	NA	<5	NA	NA	NA	<5	NA
4-Nitrophenol	---		<5	<5	NA	<5	NA	NA	NA	<5	NA
Phenol	5,800		<5	<5	NA	<5	NA	NA	NA	<5	NA

NOTES:

EPA - United States Environmental Protection Agency.
[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are p
--- - No EPA Screening Level currently exists for this analyte.

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID	MW-53P		MW-54			MW-54P		MW-55	
		Date	10/12/2011	9/6/2012	10/11/2011	9/7/2012	9/7/2012 (Dup)	10/11/2011	9/7/2012	10/11/2011	9/7/2012
		Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Volatile Organic Compounds (µg/l)											
Acetone	14,000		**9,500 J**	**23,200**	<2,000	**61.8 J**	**51.1 J**	<20,000	**7,160**	<100	<10
Benzene	0.45		**7,200**	**7,700**	<200	**11.9 J**	**14.7 J**	<2,000	**197**	**8.7 J**	**0.99 J**
Bromodichloromethane	0.13		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<1	<1
2-Butanone	5,600		<10,000	**24.7 J**	<2,000 J	<10 J	<10 J	<20,000 J	**20.5 J**	<100 J	<10
Carbon disulfide	810		<10,000	**2 J**	<2,000	<1 J	<1 J	<20,000	<1	<100	<1
Carbon tetrachloride	0.45		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
Chlorobenzene	78		**170,000**	**196,000 J**	**21,000 J**	**4,040 J**	**4,540 J**	**520,000 EJ**	**200,000**	**1,100 J**	**275**
Chloroform	0.22		<1,000	**208 J**	<200	<0.81 J	<0.66 J	<2,000	**95.8 J**	<10	<1
Chloromethane	190		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
Dibromochloromethane	0.17		<1,000	<1 J	<200	<1 J	<1 J	<2,000	**149 J**	<1	<1
1,1-Dichloroethane	2.7		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
1,2-Dichloroethane	0.17		<1,000	<1 J	<200	<1 J	**0.72 J**	<2,000	<1	**10**	**10.6**
1,1-Dichloroethene	280		<1,000	**1.9 J**	<200	<1 J	<1 J	<2,000	<1	<10	<1
cis-1,2-Dichloroethene	36		<1,000	<1 J	<200 J	<1 J	<1 J	<2,000 J	<1	<10 J	<1
trans-1,2-Dichloroethene	360		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
1,2-Dichloropropane	0.44		<1,000	**449 J**	<200	**8.5 J**	**10.5 J**	<2,000	<100 J	<10	**0.89 J**
trans-1,3-Dichloropropene	0.47		<1,000	<1 J	<200	<1 J	<1 J	<2,000	**9.4 J**	<1	<1
Ethylbenzene	1.5		<1,000	**9.6 J**	<200	<1 J	<1 J	<2,000	<1	<10	<1
2-Hexanone	38		<10,000	<10 J	<2,000	<10 J	<10 J	<20,000	**15.9 J**	<100	<10
4-Methyl-2-pentanone	1,200		<5,000	<1 J	<1,000	<10 J	<10 J	<10,000	**90.7 J**	<50	<10
Methylene Chloride	11		<1,000	**2.7 J**	<200	<1 J	<1 J	<2,000	**1.5 J**	<1	<1
Styrene	1,200		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
1,1,2,2-Tetrachloroethane	0.076		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
Tetrachloroethene	11		<1,000	**22.5 J**	<200	<1 J	<1 J	<2,000	**135 J**	<10	<1
Toluene	1,100		<1,000	**148 J**	<200	**3.3 J**	**3.0 J**	<2,000	**94.9 J**	<10	<1
1,1,2-Trichloroethane	0.28		<1,000	**582 J**	<200	<1 J	<1 J	<2,000	**16.1 J**	<1	<1
Trichloroethylene	0.49		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
Vinyl Chloride	0.019		<1,000	<1 J	<200	<1 J	<1 J	<2,000	<1	<10	<1
Xylene (total)	190		<3,000	**45.6 J**	<600	<3 J	<3 J	<6,000	**115 J**	<30	<3
Semi-Volatile Organic Compounds (µg/l)											
Caprolactam	9,900		<5	NA	<5	NA	NA	<5	NA	<5	NA
bis(2-Chloroethyl) ether	0.014		<5	NA	<5	NA	NA	<5	NA	<5	NA
2-Chlorophenol	91		<5 J	NA	<5	NA	NA	<5	NA	<5	NA
1,2-Dichlorobenzene	300		<1,000	NA	<200	NA	NA	<2,000	NA	<10	NA
1,3-Dichlorobenzene	---		<1,000	NA	<200	NA	NA	<2,000	NA	<10	NA
1,4-Dichlorobenzene	0.48		<1,000	NA	<200	NA	NA	<2,000	NA	<10	NA
Naphthalene	0.17		<5	NA	<5	NA	NA	<5	NA	<5	NA
2-Nitrophenol	---		<5 J	NA	<5	NA	NA	<5	NA	<5	NA
4-Nitrophenol	---		<5 J	NA	<5	NA	NA	<5	NA	<5	NA
Phenol	5,800		<5 J	NA	<5	NA	NA	<5	NA	<5	NA

NOTES:

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Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
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Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID	MW-55P		MW-56		MW-56P		MW-57		MW-57P	
		Date	10/11/2011	9/7/2012	1/6/2012	9/4/2012	1/9/2012	9/6/2012	1/10/2012	9/4/2012	1/6/2012	9/6/2012
		Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<1,000	**12.1 J**	<10	**28.9 J**	<1,000	**918**	<500	<10	**20**	<10
Benzene	0.45		**470 J**	**388**	**28**	**7.1 J**	<100 J	**13.2**	<50	**4.2**	<1	<1
Bromodichloromethane	0.13		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
2-Butanone	5,600		<1,000 J	<10	<10	<10 J	<1,000	**29.5**	<500	<10	**41**	<10
Carbon disulfide	810		<1,000	**0.45 J**	<10	<1 J	<1,000	**2**	<500	<1	<10	<1
Carbon tetrachloride	0.45		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
Chlorobenzene	78		**16,000 J**	**28,700**	**570**	**2,190**	**19,000**	**26,200**	**7,700**	**7,060**	**47**	<1
Chloroform	0.22		<100	**10.4 J**	<1	<1 J	<100 J	**54.9**	<50	<1	<1	<1
Chloromethane	190		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
Dibromochloromethane	0.17		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
1,1-Dichloroethane	2.7		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
1,2-Dichloroethane	0.17		<100	**1.9 J**	**6.7**	**4.5 J**	<100	**0.85 J**	<50	**7.1**	<1	<1
1,1-Dichloroethene	280		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
cis-1,2-Dichloroethene	36		<100 J	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
trans-1,2-Dichloroethene	360		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
1,2-Dichloropropane	0.44		<100	**89.2 J**	**5**	**12.7 J**	<100	**108**	<50	**8**	<1	<1
trans-1,3-Dichloropropene	0.47		<100	**2.2 J**	<1	<1 J	<100	<1	<50	<1	<1	<1
Ethylbenzene	1.5		<100	**46.4 J**	<1	<1 J	<100	**8.1**	<50	<1	**1.7**	<1
2-Hexanone	38		<1,000	<10	<10	<10 J	<1,000	<10	<500	<10	<10	<10
4-Methyl-2-pentanone	1,200		<500	<10	<5	<1 0J	<500	<10	<250	<10	<5	<10
Methylene Chloride	11		<100	**1.7 J**	<1	<1 J	<100	**4.1**	<50	<1	<1	<1
Styrene	1,200		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.076		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
Tetrachloroethene	11		<100	**2.1 J**	<1	<1 J	<100	**3.5**	<50	<1	<1	<1
Toluene	1,100		<100	**3.8 J**	<1	<1 J	**200**	**290**	<50	<1	**0.66 J**	<1
1,1,2-Trichloroethane	0.28		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
Trichloroethylene	0.49		<100	**1.0 J**	<1	<1 J	<100	<1	<50	<1	<1	<1
Vinyl Chloride	0.019		<100	<1	<1	<1 J	<100	<1	<50	<1	<1	<1
Xylene (total)	190		<300	**3.4 J**	<3	<3 J	<300	**32.3**	<150	<3	<3	<3
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<5	NA	<5 J	NA	<5 J	NA	<5 J	NA	<6.3 J	NA
bis(2-Chloroethyl) ether	0.014		<5	NA	<5 J	NA	<5 J	NA	<5 J	NA	<6.3 J	NA
2-Chlorophenol	91		**3.7 J**	NA	<5 J	NA	**9.2 J**	NA	**3.5 J**	NA	<6.3 J	NA
1,2-Dichlorobenzene	300		<100	NA	<1	NA	<100	NA	<50	NA	<1	NA
1,3-Dichlorobenzene	---		<100	NA	<1	NA	<100	NA	<50	NA	<1	NA
1,4-Dichlorobenzene	0.48		<100	NA	**0.7 J**	NA	**110**	NA	<50	NA	<1	NA
Naphthalene	0.17		<5	NA	<5 J	NA	<5 J	NA	<5 J	NA	**0.97 J**	NA
2-Nitrophenol	---		<5	NA	<5 J	NA	**80 J**	NA	<5 J	NA	<6.3 J	NA
4-Nitrophenol	---		<5	NA	<5 J	NA	<5 J	NA	<5 J	NA	<6.3 J	NA
Phenol	5,800		<5	NA	<5 J	NA	**4.3 J**	NA	<5 J	NA	<6.3 J	NA

NOTES:

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Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	MW-58 9/5/2012 Ground Water	MW-59 9/5/2012 Ground Water	MW-59P 9/5/2012 Ground Water	MW-60 9/6/2012 Ground Water	MW-60P 9/6/2012 Ground Water	MW-61 9/5/2012 Ground Water	MW-61P 9/6/2012 Ground Water	MW-62 9/5/2012 Ground Water	MW-62P 9/6/2012 Ground Water
Volatile Organic Compounds (µg/l)											
Acetone	14,000		<10	<10 J	**13.5**	**8.4 J**	<10	**7.7 J**	<10	<10	**166**
Benzene	0.45		**1.1**	**3.7 J**	<1	<1	<1	**0.79 J**	**165**	<1	<1
Bromodichloromethane	0.13		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
2-Butanone	5,600		<10	<10 J	**11.3**	<10	<10	<10	<10	<10	**162**
Carbon disulfide	810		<10	<1 J	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	0.45		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	78		**0.67 J**	**2,780**	**24.3**	**4.9**	**31.9**	**1.1**	**0.97 J**	**4.2**	**1.3**
Chloroform	0.22		<1	<1 J	<1	<1	<1	<1	<1	<1	**0.85 J**
Chloromethane	190		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.17		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	2.7		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.17		<1	**0.96 J**	<1	**1.9**	<1	**3.8**	<1	**4.5**	<1
1,1-Dichloroethene	280		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	36		<1	<1 J	**0.83 J**	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	360		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.44		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	0.47		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	1.5		<1	<1 J	<1	<1	<1	<1	**3**	<1	<1
2-Hexanone	38		<10	<10 J	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone	1,200		<10	<1 0J	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	11		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Styrene	1,200		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.076		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	11		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Toluene	1,100		**0.69 J**	<1 J	<1	<1	<1	**0.35 J**	<1	<1	<1
1,1,2-Trichloroethane	0.28		<1	<1 J	<1	<1	<1	<1	<1	<1	<1
Trichloroethylene	0.49		<1	<1 J	**0.62 J**	<1	<1	<1	<1	<1	<1
Vinyl Chloride	0.019		<1	<1 J	**0.69 J**	<1	<1	<1	<1	<1	<1
Xylene (total)	190		<3	<3 J	<3	<3	<3	<3	**1.8 J**	<3	<3
Semi-Volatile Organic Compounds (µg/l)											
Caprolactam	9,900		NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.17		NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	5,800		NA	NA	NA	NA	NA	NA	NA	NA	NA

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North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID	TP-13		TP-18		TP-19	TP-19P	TP-20	TP-20P	TP-21	TP-21D
		Date	10/10/2011	9/10/2012	10/13/2011	9/10/2012	10/14/2011	10/13/2011	10/18/2011	10/18/2011	10/17/2011	10/17/2011
		Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<100 J	<10	<200	**<3.1**	**3,000**	<100	**4,000**	<1,000	**16,000**	**15,000**
Benzene	0.45		**7.1 J**	**16.3**	<20	**24.6 J**	**4,200**	**210**	**5,500**	**66 J**	**4,600**	**5,400**
Bromodichloromethane	0.13		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
2-Butanone	5,600		<100	<10	<200	<10	<1,000	<100	<1,000	<1,000	<1,000	<2,000
Carbon disulfide	810		<100	<10	<200	<10	<1,000	<100	<1,000	<1,000	<1,000	<2,000
Carbon tetrachloride	0.45		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Chlorobenzene	78		**1,300**	**1,910**	**1,900 J**	**8,120**	**100,000**	**13,000**	**110,000**	**4,700**	**130,000**	**100,000**
Chloroform	0.22		<10	**0.93 J**	<20	**3.9 J**	<100	<10	<100	<100	<100	<200
Chloromethane	190		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Dibromochloromethane	0.17		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
1,1-Dichloroethane	2.7		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
1,2-Dichloroethane	0.17		<10	**11.1**	<20	<1	<100	<10	<100	<100	<100	<200
1,1-Dichloroethene	280		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
cis-1,2-Dichloroethene	36		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
trans-1,2-Dichloroethene	360		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
1,2-Dichloropropane	0.44		<10	**16.5**	<20	**9.6 J**	<100	<10	<100	<100	<100	<200
trans-1,3-Dichloropropene	0.47		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Ethylbenzene	1.5		<10	<1	<20	<1	**66 J**	**17**	**96 J**	<100	**69 J**	**120 J**
2-Hexanone	38		<100	<10	<200	<10	<1,000	<100	<1,000	<1,000	<1,000	<2,000
4-Methyl-2-pentanone	1,200		<50	<5	<100	<10	<500	<50	<500	<500	<500	<1,000
Methylene Chloride	11		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Styrene	1,200		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
1,1,2,2-Tetrachloroethane	0.076		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Tetrachloroethene	11		<5	<1	<5	**2.1 J**	<100	<10	<100	<100	<100	<200
Toluene	1,100		<10	**0.88 J**	<20	**1.6 J**	**270**	**18**	**280**	<100	**320**	**470**
1,1,2-Trichloroethane	0.28		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Trichloroethylene	0.49		<5	<1	<5	<1	<100	<10	<100	<100	<100	<200
Vinyl Chloride	0.019		<10	<1	<20	<1	<100	<10	<100	<100	<100	<200
Xylene (total)	190		<30	<3	<60	<3	**110 J**	**19.8 J**	**140 J**	<300	**150 J**	**280 J**
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		<10	NA	<20	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		<10	NA	<20	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		<10	NA	<20	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.17		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		<5	NA	<5 J	NA	NA	NA	NA	NA	NA	NA
Phenol	5,800		<5	NA	<5	NA	NA	NA	NA	NA	NA	NA

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Volatile Organic Compounds (µg/l)												
Acetone	14,000		<1,000	**2,700**	<100	<1,000	<200	<1,000	<2,000 J	**100**	**9.3 J**	**67**
Benzene	0.45		<100	**5,700**	**160**	**490**	**89**	<100	**270**	**7.2**	**0.63 J**	**4.2**
Bromodichloromethane	0.13		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
2-Butanone	5,600		<1,000	<1,000	<100	<1,000	<200	<1,000	<2,000 J	**6.7 J**	<10	<10
Carbon disulfide	810		<1,000	<1,000	<100	<1,000	<200	<1,000	<2,000	<10	<10	<10
Carbon tetrachloride	0.45		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Chlorobenzene	78		**4,800**	**96,000**	**4,600**	**28,000**	**3,000 J**	**620**	**16,000**	**13,000**	**160**	**2,200**
Chloroform	0.22		<100	<100	<10	<100	<20	<100	<200	**3.8**	<1	<1
Chloromethane	190		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Dibromochloromethane	0.17		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
1,1-Dichloroethane	2.7		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
1,2-Dichloroethane	0.17		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
1,1-Dichloroethene	280		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
cis-1,2-Dichloroethene	36		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
trans-1,2-Dichloroethene	360		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
1,2-Dichloropropane	0.44		<100	<100	<10	<100	<20	<100	<200	**12**	**4.4**	**12**
trans-1,3-Dichloropropene	0.47		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Ethylbenzene	1.5		<100	**130**	**22**	<100	<20	<100	<200	<1	<1	<1
2-Hexanone	38		<1,000	<1,000	<100	<1,000	<200	<1,000	<2,000	<10	<10	<10
4-Methyl-2-pentanone	1,200		<500	<500	<50	<500	<100	<500	<1,000	<5	<5	<5
Methylene Chloride	11		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Styrene	1,200		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.076		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Tetrachloroethene	11		<100	<100	<100	<100	<20	<100	<200	**0.62 J**	<1	<1
Toluene	1,100		<100	**420**	**21**	<100	**14 J**	<100	<200	**2.1**	<1	<1
1,1,2-Trichloroethane	0.28		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Trichloroethylene	0.49		<100	<100	<100	<100	<20	<100	<200	<1	<1	<1
Vinyl Chloride	0.019		<100	<100	<10	<100	<20	<100	<200	<1	<1	<1
Xylene (total)	190		<300	**260**	**38**	<300	<60	<300	<600	**0.53 J**	<3	<3
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		NA	NA	NA	NA	NA	NA	NA	**6.5**	<5	**25**
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA	NA	<5	<5	<17
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA	NA	<5	<5	<17
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA	NA	**1.4**	<1	<1
Naphthalene	0.17		NA	NA	NA	NA	NA	NA	NA	**1.5**	<5	<17
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	<5	<5	<17
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	<5	<5	<17
Phenol	5,800		NA	NA	NA	NA	NA	NA	NA	<5	<5	<17

NOTES:

EPA - United States Environmental Protection Agency.
[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are p
--- - No EPA Screening Level currently exists for this analyte.

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Amports-GW-2 8/30/2011 Ground Water	Amports-GW-2A[2] 8/30/2011 Ground Water	Amports-GW-3 8/30/2011 Ground Water	Amports-GW-4P 8/31/2011 Ground Water	Amports-GW-4 8/30/2011 Ground Water	Amports-GW-5P 9/1/2011 Ground Water	Amports-GW-5 8/30/2011 Ground Water	Amports-GW-6P 8/31/2011 Ground Water	Amports-GW-6 8/30/2011 Ground Water	Amports-GW-7P 8/30/2011 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		**13**	**19**	**13**	<1,000	**16**	**6,100**	**25**	**3,100**	<1,000	**22,000**
Benzene	0.45		**1.1**	**1**	**13**	**310**	**2.3**	**300**	**4.4**	**1,000**	**99 J**	**3,600**
Bromodichloromethane	0.13		<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
2-Butanone	5,600		<10	<10	<10	<1,000	<10	**15**	<10	<1,000	<1,000	<1,000
Carbon disulfide	810		<10	<10	<10	<1,000	<10	<10	<10	<1,000	<1,000	<1,000
Carbon tetrachloride	0.45		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
Chlorobenzene	78		**66**	**56**	**210**	**10,000**	**280**	**180,000**	**220**	**120,000**	**6,900**	**120,000**
Chloroform	0.22		<1	<1	<1	<100	<1	**82**	<1	<100	<100	**110**
Chloromethane	190		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
Dibromochloromethane	0.17		<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,1-Dichloroethane	2.7		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
1,2-Dichloroethane	0.17		**3.2**	**3.2**	**5.8**	<100	**8.2**	<1	**0.68 J**	<100	<100	<100
1,1-Dichloroethene	280		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
cis-1,2-Dichloroethene	36		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
trans-1,2-Dichloroethene	360		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
1,2-Dichloropropane	0.44		**2.7**	**2.4**	**2.1**	<100	**1.9**	**90**	**10**	<100	<100	<100
trans-1,3-Dichloropropene	0.47		<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Ethylbenzene	1.5		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
2-Hexanone	38		<10	<10	<10	<1,000	<10	<10	<10	<1,000	<1,000	<1,000
4-Methyl-2-pentanone	1,200		<5	<5	<5	<500	<5	<5	<5	<500	<500	<500
Methylene Chloride	11		<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Styrene	1,200		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
1,1,2,2-Tetrachloroethane	0.076		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
Tetrachloroethene	11		<1	<1	<1	<100	<1	**5.7**	<1	<100	<100	<100
Toluene	1,100		**0.64 J**	**0.57 J**	<1	<100	<1	**130**	<1	<100	<100	<100
1,1,2-Trichloroethane	0.28		<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Trichloroethylene	0.49		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
Vinyl Chloride	0.019		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
Xylene (total)	190		<3	<3	<3	<300	<3	**60**	<3	<300	<300	<300
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<5	<5	<5	**22 J**	<5	<5	<5	<5	<5	<5
bis(2-Chloroethyl) ether	0.014		<5	<5	<5	<25	<5	<5	<5	<5	<5	<5
2-Chlorophenol	91		<5	<5	<5	**62**	<5	<5	<5	**15**	<5	**4.5 J**
1,2-Dichlorobenzene	300		<1	<1	<1	<100	<1	**2.4**	<1	<100	<100	<100
1,3-Dichlorobenzene	---		<1	<1	<1	<100	<1	<1	<1	<100	<100	<100
1,4-Dichlorobenzene	0.48		<1	<1	<1	<100	<1	**14**	<1	<100	<100	<100
Naphthalene	0.17		<5	<5	<5	**32**	<5	**0.57 J**	<5	<5	<5	<5
2-Nitrophenol	---		<5	<5	<5	<25	<5	<5	<5	<5	<5	<5
4-Nitrophenol	---		<5	<5	<5	<25	<5	<5	<5	<5	<5	<5
Phenol	5,800		<5	<5	<5	<25	<5	<5	<5	<5	<5	<5

NOTES:

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[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are p
--- - No EPA Screening Level currently exists for this analyte.

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Amports-GW-7 8/30/2011 Ground Water	Amports-GW-8P 9/1/2011 Ground Water	Amports-GW-8 8/31/2011 Ground Water	Amports-GW-9P 9/1/2011 Ground Water	Amports-GW-9 8/31/2011 Ground Water	Amports-GW-10P 9/1/2011 Ground Water	Amports-GW-10 8/31/2011 Ground Water	Dana-GW-1P 11/17/2011 Ground Water	Dana-GW-1 11/17/2011 Ground Water	Dana-GW-2P 11/17/2011 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<1,000	**12**	**170**	**28**	**27**	**20**	**81**	<200	<200	<100
Benzene	0.45		<100	**350**	**1.5**	**8.1**	**1.2**	**3**	**19**	**35**	**23**	<10
Bromodichloromethane	0.13		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
2-Butanone	5,600		<1,000	<10	<10	<10	<10	<10	<10	<200	<200	<100
Carbon disulfide	810		<1,000	<10	<10	<10	<10	<10	<10	<200	<200	<100
Carbon tetrachloride	0.45		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Chlorobenzene	78		**510**	**9,500**	**46**	**320**	**18**	**530**	**12**	**2,900**	**3,400**	**1,000**
Chloroform	0.22		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Chloromethane	190		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Dibromochloromethane	0.17		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,1-Dichloroethane	2.7		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,2-Dichloroethane	0.17		<100	<1	<1	<1	**1**	<1	<1	<20	<20	<10
1,1-Dichloroethene	280		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
cis-1,2-Dichloroethene	36		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
trans-1,2-Dichloroethene	360		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,2-Dichloropropane	0.44		<100	**58**	**1.1**	**2.2**	**5**	**2.8**	**2.1**	<20	<20	<10
trans-1,3-Dichloropropene	0.47		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Ethylbenzene	1.5		<100	**1.2**	<1	<1	<1	<1	<1	<20	<20	<10
2-Hexanone	38		<1,000	<10	<10	<10	<10	<10	<10	<200	<200	<100
4-Methyl-2-pentanone	1,200		<500	<5	<5	<5	<5	<5	<5	<100	<100	<50
Methylene Chloride	11		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Styrene	1,200		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,1,2,2-Tetrachloroethane	0.076		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Tetrachloroethene	11		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Toluene	1,100		<100	**1.6**	<1	<1	<1	<1	<1	<20	<20	<10
1,1,2-Trichloroethane	0.28		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Trichloroethylene	0.49		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Vinyl Chloride	0.019		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
Xylene (total)	190		<300	**1**	<3	<3	<3	<3	<3	<60	<60	<30
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<5	<5	<5	<17	<5	<17	<5	<6.3	<5.6	<5.6
bis(2-Chloroethyl) ether	0.014		<5	<5	<5	<17	<5	<17	<5	<6.3	<5.6	<5.6
2-Chlorophenol	91		<5	<5	<5	<17	<5	<17	<5	**3.6 J**	<5.6	**2.8 J**
1,2-Dichlorobenzene	300		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,3-Dichlorobenzene	---		<100	<1	<1	<1	<1	<1	<1	<20	<20	<10
1,4-Dichlorobenzene	0.48		<100	**0.58 J**	<1	<1	<1	<1	<1	<20	<20	<10
Naphthalene	0.17		<5	<5	<5	<17	<5	<17	<5	**3.7 J**	<5.6	<5.6
2-Nitrophenol	---		<5	<5	<5	<17	<5	<17	<5	**10**	<5.6	**400**
4-Nitrophenol	---		<5	<5	<5	<17	<5	<17	<5	<6.3	<5.6	<5.6
Phenol	5,800		<5	<5	<5	<17	<5	<17	<5	**7.3**	<5.6	**11**

NOTES:

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Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
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<0.001 J - Not detected above laboratory reporting limit. Results are p
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Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Dana-GW-2 11/17/2011 Ground Water	Dana-GW-3P 11/18/2011 Ground Water	Dana-GW-3 11/17/2011 Ground Water	Dana-GW-3D 11/17/2011 Ground Water	Dana-GW-4P 11/17/2011 Ground Water	Dana-GW-4 11/17/2011 Ground Water	Dana-GW-5P 11/18/2011 Ground Water	Dana-GW-5 11/17/2011 Ground Water	Dana-GW-6 6/12/2012 Ground Water	Dana-GW-7 6/12/2012 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<200	**700**	<200	<200	**110**	<1,000	**1,100**	<1,000	**50.2**	**2.8 J**
Benzene	0.45		<20	<50	<20	<20	<10	<100	<50	<100	**5**	**2.7**
Bromodichloromethane	0.13		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
2-Butanone	5,600		<200	<500	<200	<200	<100	<1,000	<500	<1,000	**3.5 J**	<10.0
Carbon disulfide	810		<200	<500	<200	<200	<100	<1,000	<500	<1,000	**5.2**	<1.0
Carbon tetrachloride	0.45		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Chlorobenzene	78		**2,300**	**6,100**	**2,700**	**2,700**	**800**	**11,000**	**9,800**	**36,000**	<1.0	**3,100**
Chloroform	0.22		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Chloromethane	190		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Dibromochloromethane	0.17		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
1,1-Dichloroethane	2.7		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
1,2-Dichloroethane	0.17		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	**6.7**
1,1-Dichloroethene	280		<20	<50	<20	<20	<10	<100	<50	<100	**0.47 J**	<1.0
cis-1,2-Dichloroethene	36		<20	<50	<20	<20	<10	<100	<50	<100	**76.7**	<1.0
trans-1,2-Dichloroethene	360		<20	<50	<20	<20	<10	<100	<50	<100	**17.7**	<1.0
1,2-Dichloropropane	0.44		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	**7.2**
trans-1,3-Dichloropropene	0.47		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Ethylbenzene	1.5		<20	<50	<20	<20	<10	<100	<50	<100	**21.3**	<1.0
2-Hexanone	38		<200	<500	<200	<200	<100	<1,000	<500	<1,000	<10.0	<10.0
4-Methyl-2-pentanone	1,200		<100	<250	<100	<100	<50	<500	<250	<500	**5.2 J**	<10.0
Methylene Chloride	11		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Styrene	1,200		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.076		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Tetrachloroethene	11		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Toluene	1,100		<20	**97**	<20	<20	**15**	<100	**170**	<100	**114**	**0.38 J**
1,1,2-Trichloroethane	0.28		<20	<50	<20	<20	<10	<100	<50	<100	<1.0	<1.0
Trichloroethylene	0.49		<20	<50	<20	<20	<10	<100	<50	<100	**17.6**	**0.30 J**
Vinyl Chloride	0.019		<20	<50	<20	<20	<10	<100	<50	<100	**44.4**	<1.0
Xylene (total)	190		<60	<150	<60	<60	<30	<300	<150	<300	**82.6**	<3.0
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		<7.1	<5.6	<6.3	<5.6	<6.3	<6.3	<5.6	<7.1	NA	NA
bis(2-Chloroethyl) ether	0.014		<7.1	<5.6	<6.3	<5.6	<6.3	<6.3	<5.6	<7.1	NA	NA
2-Chlorophenol	91		<7.1	**3.3 J**	<6.3	<5.6	**6.4**	<6.3	**4.6 J**	**8.8**	NA	NA
1,2-Dichlorobenzene	300		<20	<50	<20	<20	<10	<100	<50	<100	NA	NA
1,3-Dichlorobenzene	---		<20	<50	<20	<20	<10	<100	<50	<100	NA	NA
1,4-Dichlorobenzene	0.48		<20	**34 J**	<20	<20	**6.1 J**	<100	**85**	**110**	NA	NA
Naphthalene	0.17		<7.1	<5.6	<6.3	<5.6	<6.3	<6.3	<5.6	<7.1	NA	NA
2-Nitrophenol	---		<7.1	**400**	<6.3	<5.6	**2,900**	<6.3	**390**	<7.1	NA	NA
4-Nitrophenol	---		<7.1	<5.6	<6.3	<5.6	**4.9 J**	<6.3	<5.6	<7.1	NA	NA
Phenol	5,800		<7.1	**5 J**	**4.5 J**	<5.6	**9.6**	**3.5 J**	**4.8 J**	<7.1	NA	NA

NOTES:

EPA - United States Environmental Protection Agency.
[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are p
--- - No EPA Screening Level currently exists for this analyte.

Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Dana-GW-7P 6/13/2012 Ground Water	Dana-GW-8 6/13/2012 Ground Water	Dana-GW-8P 6/13/2012 Ground Water	Dana-GW-9 6/13/2012 Ground Water	Dana-GW-9P 6/13/2012 Ground Water	Dana-GW-10 6/13/2012 Ground Water	Fleet-GW-1 6/11/2012 Ground Water	Fleet-GW-2 6/11/2012 Ground Water	Fleet-GW-3 6/11/2012 Ground Water	Fleet-GW-3P 6/11/2012 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		**15.7**	<10.0	**14.2**	**2.7 J**	**22.6**	**14.2**	**7.9 J**	<50	**8.7 J**	**33**
Benzene	0.45		<1.0	**1.1**	<1.0	<1.0	**1.6**	**16.1**	<1	**770**	<1.0	<1
Bromodichloromethane	0.13		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
2-Butanone	5,600		**2.3 J**	<10.0	**2.8 J**	<10.0	**4.4 J**	**4.6 J**	<10	<50	<10.0	<10
Carbon disulfide	810		<1.0	**1.7**	<1.0	<1.0	<1.0	**3.4**	<10	<50	**2.8**	<10
Carbon tetrachloride	0.45		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	**3.0**	<1
Chlorobenzene	78		**1.2**	**158**	<1.0	**44.6**	**469**	**0.60 J**	<1	<5	**1.7**	<1
Chloroform	0.22		<1.0	<1.0	<1.0	<1.0	**0.38 J**	<1.0	<1	<5	<1.0	<1
Chloromethane	190		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	**7.0**	<1
Dibromochloromethane	0.17		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
1,1-Dichloroethane	2.7		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
1,2-Dichloroethane	0.17		<1.0	**0.50 J**	<1.0	**2.9**	<1.0	<1.0	<1	<5	**0.57 J**	<1
1,1-Dichloroethene	280		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
cis-1,2-Dichloroethene	36		<1.0	<1.0	<1.0	<1.0	<1.0	**14.1**	<1	<5	<1.0	<1
trans-1,2-Dichloroethene	360		<1.0	<1.0	<1.0	<1.0	<1.0	**2.5**	<1	<5	<1.0	<1
1,2-Dichloropropane	0.44		<1.0	**0.39 J**	<1.0	**1.1**	**3.7**	<1.0	<1	<5	<1.0	<1
trans-1,3-Dichloropropene	0.47		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
Ethylbenzene	1.5		<1.0	<1.0	<1.0	<1.0	<1.0	**5.8**	<1	**52**	<1.0	<1
2-Hexanone	38		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10	<50	<10.0	<10
4-Methyl-2-pentanone	1,200		<10.0	<10.0	**1.6 J**	<10.0	<10.0	**1.2 J**	<5	<25	<10.0	<5
Methylene Chloride	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
Styrene	1,200		<1.0	<1.0	<1.0	<1.0	<1.0	**1.2**	<1	<5	<1.0	<1
1,1,2,2-Tetrachloroethane	0.076		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	**2.1**	<1
Tetrachloroethene	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
Toluene	1,100		**0.20 J**	**0.23 J**	<1.0	**0.32 J**	**0.40 J**	**41.2**	<1	**28**	<1.0	<1
1,1,2-Trichloroethane	0.28		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5	<1.0	<1
Trichloroethylene	0.49		<1.0	<1.0	<1.0	<1.0	<1.0	**0.43 J**	<1	<5	**0.40 J**	<1
Vinyl Chloride	0.019		<1.0	<1.0	<1.0	<1.0	<1.0	**7.1**	<1	<5	<1.0	<1
Xylene (total)	190		<3.0	<3.0	<3.0	<3.0	<3.0	**33.1**	<3	**30**	<3.0	<3
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	5,800		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

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[2]Triplicate volume MS/MSD sample collected
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Table 1
North Parcel Ground Water Analytical Results
FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Fleet-GW-4 6/11/2012 Ground Water	Fleet-GW-4P 6/11/2012 Ground Water	Fleet-GW-5 6/11/2012 Ground Water	Fleet-GW-5P 6/11/2012 Ground Water	Fleet-GW-6 6/11/2012 Ground Water	Fleet-GW-6P 6/14/2012 Ground Water	Fleet-GW-7[2] 6/13/2012 Ground Water	Fleet-GW-7P 6/13/2012 Ground Water	Fleet-GW-8 6/13/2012 Ground Water	Fleet-GW-8P 6/13/2012 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		<10.0	**11**	<10.0	**20.2**	<10.0	**353**	<10.0	**31.9**	<10.0	**84.2**
Benzene	0.45		**7.5**	**2.8**	**20.5**	**97.6**	<1.0	**3**	<1.0	<1.0	**45.1**	**193**
Bromodichloromethane	0.13		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	5,600		<10.0	<10	<10.0	<10.0	<10.0	**43.6**	<10.0	**2.5 J**	**2.6 J**	<10.0
Carbon disulfide	810		**3.2**	<10	**20.1**	**15.6**	**8.7**	<1.0	<1.0	<1.0	<1.0	**2.7**
Carbon tetrachloride	0.45		**2.4**	<1	**1.8**	**14.7**	**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	78		**381**	**190**	**0.44 J**	<1.0	<1.0	<1.0	<1.0	<1.0	**39.2**	**219**
Chloroform	0.22		**0.44 J**	<1	**0.35 J**	**2.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	190		**6.3**	<1	**10.3**	**28.8**	**6.9**	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	0.17		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	2.7		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.17		**2.1**	<1	**0.28 J**	<1.0	**4.1**	**0.26 J**	**0.50 J**	**0.16 J**	**1.3**	<1.0
1,1-Dichloroethene	280		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	36		<1.0	<1	<1.0	**0.40 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	360		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	0.44		**8.5**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.6**
trans-1,3-Dichloropropene	0.47		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	1.5		<1.0	**1.5**	**11.4**	**137**	<1.0	**5.1**	<1.0	<1.0	**8.8**	**30.6**
2-Hexanone	38		<10.0	<10	<10.0	<10.0	<10.0	**1.3 J**	<10.0	<10.0	<10.0	<10.0
4-Methyl-2-pentanone	1,200		<10.0	<5	<10.0	**1.9 J**	<10.0	**5.2 J**	<10.0	<10.0	<10.0	<10.0
Methylene Chloride	11		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	1,200		<1.0	<1	<1.0	<1.0	<1.0	**0.93 J**	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.076		**1.9**	<1	**1.4**	<1.0	**1.0 J**	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	11		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1,100		<1.0	<1	**3.9**	**32**	<1.0	**6.3**	<1.0	<1.0	**3.1**	**10.5**
1,1,2-Trichloroethane	0.28		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	0.49		**0.41 J**	<1	**0.34 J**	**1.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	0.019		<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	190		<3.0	<3	**25.9**	**264**	<3.0	**33.5**	<3.0	<3.0	**4.6**	**11.9**
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	5,800		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

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[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
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NA - Not analyzed.
µg/l - micrograms per liter.
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Table 1
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FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Fleet-GW-9 6/13/2012 Ground Water	Fleet-GW-9A 6/13/2012 Ground Water	Fleet-GW-9P 6/14/2012 Ground Water	Fleet-GW-10[2] 6/14/2012 Ground Water	Fleet-GW-10P 6/14/2012 Ground Water	Fleet-GW-11 6/14/2012 Ground Water	Fleet-GW-12 6/14/2012 Ground Water	Fleet-GW-12P 6/14/2012 Ground Water	Fleet-GW-13 6/14/2012 Ground Water	Fleet-GW-13A 6/14/2012 Ground Water
Volatile Organic Compounds (µg/l)												
Acetone	14,000		**3.0 J**	**2.7 J**	**18.7**	**5.4 J**	**29.9**	<10.0	**3.3 J**	**117**	<10.0	**3.4 J**
Benzene	0.45		<1.0	<1.0	**0.85 J**	<1.0	<1.0	<1.0	**0.93 J**	**558**	**77.1**	**118**
Bromodichloromethane	0.13		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	5,600		<10.0	<10.0	<10.0	<10.0	**3.2 J**	<10.0	<10.0	<10.0	<10.0	<10.0
Carbon disulfide	810		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	0.45		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	78		<1.0	**9.9**	**33.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	0.22		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	190		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	0.17		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	2.7		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.17		**2.3**	**2.1**	<1.0	**5.7**	<1.0	**0.54 J**	**12.5**	<1.0	**4.6**	**4.2**
1,1-Dichloroethene	280		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	36		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	360		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	0.44		**0.85 J**	**0.94 J**	**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	0.47		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	1.5		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**19.6**	**13.8**	**16.1**
2-Hexanone	38		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
4-Methyl-2-pentanone	1,200		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**1.8 J**
Methylene Chloride	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	1,200		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.076		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1,100		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**6**	**6.8**
1,1,2-Trichloroethane	0.28		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	0.49		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	0.019		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	190		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	**3.6 J**	**11**	**13**
Semi-Volatile Organic Compounds (µg/l)												
Caprolactam	9,900		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	5,800		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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FMC Baltimore Former Agricultural Products Group Facility

Parameter	EPA RSLs[1]	Well ID Date Matrix	Fleet-GW-13P 6/14/2012 Ground Water	Fleet-GW-14 6/14/2012 Ground Water	Fleet-GW-14P 6/14/2012 Ground Water	Fleet-GW-15 6/15/2012 Ground Water	Fleet-GW-15P 6/15/2012 Ground Water	Fleet-GW-16 6/15/2012 Ground Water
Volatile Organic Compounds (µg/l)								
Acetone	14,000		**187**	<10.0	**9.9 J**	**3.7 J**	**14**	**5.3 J**
Benzene	0.45		**546**	**31.9**	**235**	<1.0	**0.47 J**	<1.0
Bromodichloromethane	0.13		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	5,600		**63.7**	<10.0	<10.0	<10.0	**3.1 J**	<10.0
Carbon disulfide	810		<1.0	<1.0	<1.0	<1.0	**0.30 J**	**0.79 J**
Carbon tetrachloride	0.45		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	78		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	0.22		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	190		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	0.17		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	2.7		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.17		**0.55 J**	**0.85 J**	<1.0	**37.4**	**26.7**	**0.89 J**
1,1-Dichloroethene	280		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	36		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	360		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	0.44		<1.0	<1.0	<1.0	**0.37 J**	**0.28 J**	<1.0
trans-1,3-Dichloropropene	0.47		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	1.5		**79.6**	**0.96 J**	**7.9**	<1.0	<1.0	<1.0
2-Hexanone	38		**2.6 J**	<10.0	<10.0	<10.0	**2.5 J**	<10.0
4-Methyl-2-pentanone	1,200		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Methylene Chloride	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	1,200		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.076		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	11		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1,100		**13.8**	**2.7**	**15.5**	<1.0	**0.30 J**	<1.0
1,1,2-Trichloroethane	0.28		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	0.49		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	0.019		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	190		**20**	**2.7 J**	**17.3**	<3.0	<3.0	<3.0
Semi-Volatile Organic Compounds (µg/l)								
Caprolactam	9,900		NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	0.014		NA	NA	NA	NA	NA	NA
2-Chlorophenol	91		NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	300		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	---		NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.48		NA	NA	NA	NA	NA	NA
Naphthalene	0.17		NA	NA	NA	NA	NA	NA
2-Nitrophenol	---		NA	NA	NA	NA	NA	NA
4-Nitrophenol	---		NA	NA	NA	NA	NA	NA
Phenol	5,800		NA	NA	NA	NA	NA	NA

NOTES:

EPA - United States Environmental Protection Agency.
[1]EPA Regional Screening Levels for Tapwater, May 2014.
[2]Triplicate volume MS/MSD sample collected
EJ - Data exceeds upper calibration limit. Concentration is reported as
J - Concentration reported is estimated.
Due to high concentrations of certain analytes some detection limits ex
NA - Not analyzed.
µg/l - micrograms per liter.
Bold - Indicates detected result.
Highlighted - Indicates detected result that is equal to or above EPA screening criteria.
<0.001 - Indicates constituent was not present above RL.
<0.001 J - Not detected above laboratory reporting limit. Results are p
--- - No EPA Screening Level currently exists for this analyte.

Table 2
North Parcel Monitoring Well Construction Summary
FMC Baltimore Former Agricultural Products Group Facility

Well ID	Well Diameter (inches)	Ground Elevation (ft msl)	TOC Elevation (ft msl)	Total Depth (ft below TOC)	Screen Interval (ft below TOC)
Perched Monitoring Wells					
MW-51P	4	28.24	30.80	12.63	7.63 - 12.63
MW-53P	2	22.25	21.94	7.72	5.72 - 7.72
MW-54P	2	21.43	21.15	6.71	1.71 - 6.71
MW-55P	2	19.41	19.17	7.16	2.16 - 7.16
MW-56P	2	20.18	20.07	6.90	1.90 - 6.90
MW-57P	2	20.46	20.17	7.01	2.01 - 7.01
MW-59P*	2	20.23	19.83	7.22	2.22 - 7.22
MW-60P*	2	25.58	25.26	10.95	5.95 - 10.95
MW-61P*	2	25.58	25.28	11.04	6.04 - 11.04
MW-62P*	2	21.12	20.63	6.82	1.82 - 6.82
Shallow Monitoring Wells					
MW-20	2	23.15	26.13	28.00	23 - 28
MW-24	2	28.62	31.41	29.00	24 - 29
MW-24A	2	28.53	31.41	52.00	47 - 52
MW-24C	2	28.98	31.24	119.00	109 - 119
MW-25[1]	2	28.31	27.08	20.00	15 -20
MW-26	2	16.47	17.57	20.00	15 - 20
MW-36	2	22.62	24.80	25.00	15 - 25
MW-39	2	24.58	26.92	26.00	16 - 26
MW-40	2	24.14	26.63	25.00	15 - 25
MW-46*	2	28.96	32.40	20.00	10 - 20
MW-47*	2	27.86	30.58	19.00	9 - 19
MW-48	2	25.07	27.51	16.00	6 - 16
MW-49*	2	20.69	23.28	15.00	5 - 15
MW-50[2]	2	25.58	28.18	22.00	5 - 22
MW-53*[3]	2	22.21	21.85	24.80	14.80 - 24.80
MW-54*[3]	2	21.40	21.15	22.95	12.95 - 22.95
MW-55[3]	2	19.41	19.11	19.31	9.31 - 19.31
MW-56[3]	2	20.22	20.07	22.03	12.03 - 22.03
MW-57[3]	2	20.29	20.05	22.00	12 - 22
MW-59[3]	2	20.20	19.87	20.55	10.55 - 20.55
MW-60[3]	2	25.63	25.29	28.25	18.25 - 28.25
MW-61*[3]	2	25.26	25.20	26.10	16.10 - 26.10
MW-62*[2]	2	21.05	20.76	21.25	11.25 - 21.25

NOTES:

[1] Reference elevation is the updated November 2009 surveyed elevation.
[2] Reference elevation is the updated June 2010 surveyed elevation.
[3] Reference elevation is the updated October 2011 surveyed elevation.
All others are from the January 2009 survey.
* Denotes wells that will be monitored for water level only (no sample collection).
ft msl - feet mean sea level
TOC - Top of Outer Casing

Table 3
North Parcel Monitoring Well Abandonments
FMC Baltimore Former Agricultural Products Group Facility

Well ID	Well Diameter (inches)	Ground Elevation (ft msl)	TOC Elevation (ft msl)	Total Depth (ft below TOC)	Screen Interval (ft below TOC)	Rationale for Abandonment
Perched Monitoring Wells						
MW-52P	4	27.02	30.10	15.42	10.42 - 15.42	Well located within excavation area
MW-58P	2	19.90	19.54	6.36	1.36 - 6.36	Well typically dry
Shallow Monitoring Wells						
MW-6	2	21.47	24.41	23.00	18 - 23	Well located on 17-acre portion of the North Parcel
MW-19	2	21.77	24.81	17.00	12 - 17	Well located on 17-acre portion of the North Parcel
MW-19A	2	21.69	23.41	27.00	22 - 27	Well located on 17-acre portion of the North Parcel
MW-21	2	23.35	26.28	20.00	15 - 20	Well located on 17-acre portion of the North Parcel
MW-22	2	26.36	28.82	20.00	15 - 20	Well located within excavation area
MW-23	2	27.10	29.52	25.00	20 - 25	Well located within excavation area
MW-36A	2	22.98	24.91	45.00	35 - 45	Well located on 17-acre portion of the North Parcel
MW-51[2]	4	28.07	29.57	28.00	18 - 28	Well located within excavation area
MW-52[2]	4	27.19	29.73	25.00	15 - 25	Well located within excavation area
MW-58[3]	2	19.96	19.68	18.62	8.62 - 18.62	Well no longer needed for investigation purposes
Temporary Piezometers						
TP-1[3]	2	27.20	27.24	17.79	7.79 - 17.79	Piezometer no longer needed for investigation purposes
TP-2	2	27.44	29.52	16.95	6.95 - 16.95	Piezometer no longer needed for investigation purposes
TP-3	2	27.94	29.59	17.30	7.30 - 17.30	Piezometer no longer needed for investigation purposes
TP-4	2	26.76	28.02	13.29	3.29 - 13.29	Piezometer no longer needed for investigation purposes
TP-5	2	27.00	29.26	17.56	7.56 - 17.56	Piezometer no longer needed for investigation purposes
TP-6	2	27.80	28.71	19.84	4.84 - 19.84	Piezometer no longer needed for investigation purposes
TP-7	2	26.21	27.15	18.18	8.18 - 18.18	Piezometer no longer needed for investigation purposes
TP-8	2	27.36	28.01	20.05	10.05 - 20.05	Piezometer no longer needed for investigation purposes
TP-9[3]	2	27.13	28.04	18.73	8.73 - 18.73	Piezometer no longer needed for investigation purposes
TP-11	2	28.72	29.50	20.09	10.09 - 20.09	Piezometer no longer needed for investigation purposes
TP-12	2	28.07	29.71	19.20	4.20 - 19.20	Piezometer no longer needed for investigation purposes
TP-13	2	25.04	25.79	19.35	9.35 - 19.35	Piezometer no longer needed for investigation purposes
TP-18[1]	2	25.76	28.12	13.74	8.74 - 13.74	Piezometer no longer needed for investigation purposes
TP-19[2]	2	27.95	29.66	30.10	29.10 - 30.10	Piezometer no longer needed for investigation purposes
TP-19P[2]	2	28.00	30.25	13.10	8.10 - 13.10	Piezometer no longer needed for investigation purposes
TP-20[2]	2	27.24	30.51	29.74	19.74 - 29.74	Piezometer no longer needed for investigation purposes
TP-20P[2]	2	27.20	28.21	11.81	6.81 - 11.81	Piezometer no longer needed for investigation purposes
TP-21[2]	2	25.54	29.38	27.89	17.89 - 27.89	Piezometer no longer needed for investigation purposes
TP-21P[2]	2	25.55	29.94	15.24	10.24 - 15.24	Piezometer no longer needed for investigation purposes
TP-22[2]	2	27.74	28.28	27.77	17.77 - 27.77	Piezometer no longer needed for investigation purposes
TP-22P[2]	2	27.64	28.20	11.50	6.50 - 11.50	Piezometer no longer needed for investigation purposes
TP-23[2]	2	27.27	29.58	30.25	20.25 - 30.25	Piezometer no longer needed for investigation purposes
TP-23P[2]	2	27.22	29.39	12.89	7.89 - 12.89	Piezometer no longer needed for investigation purposes
TP-24[2]	2	26.08	27.92	28.54	18.54 - 28.54	Piezometer no longer needed for investigation purposes
TP-24P[2]	2	26.12	28.13	12.61	7.61 - 12.61	Piezometer no longer needed for investigation purposes
Injection Well						
SIP-1	1	---	---	21.00	---	Well no longer needed for investigation purposes
SIP-2	1	---	---	21.00	---	Well no longer needed for investigation purposes
SIP-3	1	---	---	21.00	---	Well no longer needed for investigation purposes
SIP-4	1	27.20	---	21.00	---	Well no longer needed for investigation purposes
SIP-5	---	---	---	---	---	Well no longer needed for investigation purposes
SMP-1	---	26.29	27.27	25.00	---	Well no longer needed for investigation purposes
SMP-2 (MW-22)	1	26.71	29.00	25.00	---	Well no longer needed for investigation purposes
SMP-3	1	26.74	27.69	25.00	---	Well no longer needed for investigation purposes
SMP-4D	1	26.99	27.70	32.00	---	Well no longer needed for investigation purposes
SMP-4M	---	27.01	27.99	25.00	---	Well no longer needed for investigation purposes
SMP-4S	---	27.12	28.07	20.00	---	Well no longer needed for investigation purposes
SMP-5D	1	26.76	27.72	25.00	---	Well no longer needed for investigation purposes
SMP-5M	---	26.85	27.94	26.00	---	Well no longer needed for investigation purposes
SMP-5S	---	26.78	27.81	20.00	---	Well no longer needed for investigation purposes
PIP-1	1	---	---	12.00	---	Well no longer needed for investigation purposes
PIP-2	2	---	---	12.00	---	Well no longer needed for investigation purposes
PIW-1	2	---	---	12.00	---	Well no longer needed for investigation purposes
PIW-2	2	---	---	12.00	---	Well no longer needed for investigation purposes
PIW-3	2	---	---	12.00	---	Well no longer needed for investigation purposes
PIW-4	2	---	---	12.00	---	Well no longer needed for investigation purposes
PIW-5	2	---	---	12.00	---	Well no longer needed for investigation purposes
PMP-1	---	26.19	27.24	12.00	---	Well no longer needed for investigation purposes
PMP-2	---	25.43	29.38	15.00	---	Well no longer needed for investigation purposes
PMP-3	2	25.53	26.56	12.00	---	Well no longer needed for investigation purposes
PMP-4	2	25.59	26.69	12.00	---	Well no longer needed for investigation purposes
PRM-1D	1	25.64	26.77	12.00	---	Well no longer needed for investigation purposes
PRM-1S	1	25.79	27.27	12.00	---	Well no longer needed for investigation purposes
PRM-2D	2	25.83	26.96	12.00	---	Well no longer needed for investigation purposes
PRM-2S	2	25.96	26.89	10.00	---	Well no longer needed for investigation purposes

NOTES:

[1] Reference elevation is the updated June 2010 surveyed elevation.
[2] Reference elevation is the updated October 2011 surveyed elevation.
[3] Piezometers were cut down to facilitate the October 2011 Supplemental Investigation. Reference elevations and bottom elevations were adjusted accordingly.
--- - Not available.
ft msl - feet mean sea level
TOC - Top of Outer Casing

Table 4
Analytical Methods, Select Compounds and Laboratory Reporting Limits
FMC Baltimore Former Agricultural Products Group Facility

Method	Compound	Proposed Reporting Limit	Proposed Method Detection Limit
VOC (ug/L) EPA 8260			
	Acetone	10	5.0
	Benzene	1.0	0.5
	Bromodichloromethane	1.0	5.0
	Bromoform	5.0	2.5
	Bromomethane	1.0	0.5
	2-Butanone (MEK)	10	5.0
	Carbon disulfide	10	5.0
	Carbon tetrachloride	1.0	0.5
	Chlorobenzene	1.0	0.5
	Chloroethane	1.0	0.5
	Chloroform	1.0	0.5
	Chloromethane	1.0	0.5
	Dibromochloromethane	1.0	0.5
	1,1-Dichloroethane	1.0	0.5
	1,2-Dichloroethane	1.0	0.5
	1,1-Dichloroethene	1.0	0.5
	1,2-Dichloropropane	1.0	0.5
	cis-1,3-Dichloropropene	1.0	0.5
	trans-1,3-Dichloropropene	1.0	0.5
	Ethylbenzene	1.0	0.5
	2-Hexanone	10.0	5.0
	4-Methyl-2-pentanone(MIBK)	5.0	2.5
	Methylene chloride	1.0	0.5
	Styrene	1.0	0.5
	1,1,2,2-Tetrachloroethane	1.0	0.5
	Tetrachloroethene	1.0	0.5
	Toluene	1.0	0.5
	1,1,1-Trichloroethane	1.0	0.5
	1,1,2-Trichloroethane	1.0	0.5
	Trichloroethene	1.0	0.5
	Vinyl chloride	1.0	0.5
	Xylene (total)	3.0	1.5

Table 5
Sampling and Analysis Matrix
FMC Baltimore Former Agricultural Products Group Facility

Matrix	Number of Samples	Number of Trip Blanks	Number of Equipment Blanks	Number of Duplicates	Number of Matrix Spike Samples	Number of Matrix Spike Duplicate Samples	Total Number of samples	Analysis	Analytical Method
Ground Water	22	1	1	1	1	1	27	TCL VOCs	8260

Notes:
Trip blanks are sampled at a rate of one per cooler; therefore, more than one trip blank may be analyzed

Table 6
Comparison of Laboratory Reporting and Method Detection Limits to USEPA's Screening Criteria
FMC Baltimore Former Agricultural Products Group Facility

PARAMETER	Proposed Reporting Limit (µg/l)	Proposed Method Detection Limit (µg/l)	USEPA Screening Criteria*	USEPA Maximum Contaminant Level
TCLs VOCs (µg/l)				
Acetone	10	5.0	14,000	
Benzene	1.0	0.5	0.46	5
Bromodichloromethane	1.0	5.0	0.13	80
Bromoform	5.0	2.5	3.30	80
Bromomethane	1.0	0.5	7.50	
2-Butanone (MEK)	10	5.0	5,600	
Carbon disulfide	10	5.0	810	
Carbon tetrachloride	1.0	0.5	0.46	5
Chlorobenzene	1.0	0.5	78	100
Chloroethane	1.0	0.5	21,000	
Chloroform	1.0	0.5	0.22	80
Chloromethane	1.0	0.5	190	
Dibromochloromethane	1.0	0.5	0.87	80
1,1-Dichloroethane	1.0	0.5	2.80	
1,2-Dichloroethane	1.0	0.5	0.17	5
1,1-Dichloroethene	1.0	0.5	280	7
1,2-Dichloropropane	1.0	0.5	0.44	5
cis-1,3-Dichloropropene	**1.0**	**0.5**	0.47	
trans-1,3-Dichloropropene	**1.0**	**0.5**	0.47	
Ethylbenzene	1.0	0.5	1.50	700
2-Hexanone	10.0	5.0	38	
4-Methyl-2-pentanone(MIBK)	5.0	2.5	6,300	
Methylene chloride	1.0	0.5	11	5
Styrene	1.0	0.5	1,200	100
1,1,2,2-Tetrachloroethane	**1.0**	**0.5**	0.076	
Tetrachloroethene	1.0	0.5	11	5
Toluene	1.0	0.5	1,100	1,000
1,1,1-Trichloroethane	1.0	0.5	8,000	200
1,1,2-Trichloroethane	1.0	0.5	0.28	5
Trichloroethene	1.0	0.5	0.49	5
Vinyl chloride	1.0	0.5	0.019	2
Xylene (total)	3.0	1.5	190	10,000

NOTES:
* USEPA Regional Tap Water Screening Levels, May 2016
Units are micrograms/liter (µg/l)
N/A - Standard not available
Bold and Gray Highlight - Reporting Limit and/or Method Detection Limit is above the USEPA Maximum Contaminant Level (MCL), or in the absence of a MCL above the USEPA risk-based screening level.

ATTACHMENT A – MONITORING WELL AND SECURITY INSPECTION FORM

MONITORING WELL & SECURITY INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Date:	Time:
Weather Conditions:	
General Conditions:	

Monitoring Wells	☐ Caps/Locks Missing ☐ Bolts Intact ☐ Casing Damage ☐ Damaged Well Pad ☐ Missing Well ID Number/Marking Comments:
Security	☐ Locks Functioning ☐ Locks Damaged/Missing ☐ Signs Missing/Damaged ☐ Signs Intact/Quality ☐ Fencing Condition (Holes, Damage, Corrosion) Comments:

MONITORING WELL & SECURITY INSPECTION FORM	FMC Baltimore – North Parcel Baltimore, Maryland

Response Required	
Work Completed	
Photos/ Figures Attached	
Response Contractor	Date: Inspector Name (Print): Inspector Signature: Conditions Reported To:

ATTACHMENT B – MDE WELL ABANDONMENT FORM

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard ● Baltimore Maryland 21230
(410) 537-3000 ● 1-800-633-6101 ● http://www.mde.state.md.us

WATER WELL ABANDONMENT-SEALING REPORT FORM

SUBMIT COPIES OF COMPLETED FORM TO:

* COUNTY EVIRONMENTAL AGENCY (contact MDE, WMA if address needed)
* WELL OWNER
* MDE, WATER MANAGEMENT ADMINISTRATION, WELL PROGRAM

DATE WELL ABANDONED: _____ (month/day/year)

* PERMIT NUMBER OF ABANDONED WELL (if any) _____

* PERMIT NUMBER OF REPLACEMENT WELL: _____

* PERSON ABANDONING WELL: _____ WELL DRILLER'S LICENSE NUMBER: _____
  CIRCLE: MWD / MSD / MGD

* OWNER'S NAME: _____

* WELL LOCATION:
  COUNTY:_____
  NEAREST TOWN:_____
  TAX MAP_____BLOCK_____PARCEL_____
  SUBDIVISION:_____
  SECTION:_____LOT:_____
  NEAREST ROAD:_____

SITE LOCATION MAP

* TYPE OF WELL BEING ABANDONED:
  _____DRILLED _____JETTED
  _____BORED _____HAND DUG
  _____OTHER (specify)_____

* USE CODE:
  _____DOMESTIC _____MUNICIPAL/PUBLIC
  _____IRRIGATION _____INDUSTRIAL
  _____TEST/OBSERVATION _____GEOTHERMAL

* TYPE OF CASING:
  _____STEEL _____PLASTIC
  _____CONCRETE _____OTHER (specify)
  _____

SIZE OF CASING:_____INCHES IN DIAMETER

DEPTH OF WELL:_____FEET DEEP

WAS ANY CASING REMOVED?____YES _____NO
If yes, length removed, in feet:_____

WAS CASING RIPPED OR PERFORATED? ____YES____NO

LOG OF SEALING MATERIAL

MATERIAL	FEET	
	FROM	TO
VOLUME OF MATERIAL USED		

_____ MWD / MSD / MGS _____
SIGNATURE-MASTER WELL DRILLER OR SUPERVISING SANITARIAN LICENSE# CIRCLE ONE DATE

INSTRUCTIONS

TO: Person Completing "Water Well Abandonment and Sealing Report"

FROM: Waste Water Permits Program, On-Site Systems Division

SUBJECT: Instruction for Completing the "WATER WELL ABANDONMENT AND SEALING REPORT FORM"

DATE: June 1, 2007

GENERAL DISCUSSION:

A well is to considered as "abandoned" when any of the following conditions occur:

A. The well is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical; or,

B. The well has been permanently disconnected from any water supply system or irrigation system.

Once a well is determined to be abandoned, the well shall be sealed to prevent a hazard to the safety and well being of humans or animals and to prevent the interchange of waters of undesirable quality with those waters of desirable quality.

The owner of the well shall notify the Maryland Department of the Environment of the sealing of any well on the form provided within 30 days after sealing the well.

DIRECTIONS FOR COMPLETING REPORT FORM:

1. Fill out the form completely and legibly;

2. Provide the Well Construction Permit Number. This is the number on the 3"x5" metal tag on the wellhead. If the tag is not present or the permit number is not known, write in "unknown";

3. Fill in the location of the property information. The State Assessment and Taxation web site, www.dat.state.md.us, under "Real Property Data Search" can be used to identify the property Tax Map and Parcel information;

4. Draw in the major features on the property, such as buildings, and locate the abandoned and sealed well with reference to the fixed physical features on the property; and,

5. Complete the check box information describing the abandoned and sealed well and include the identification and volumes of the sealing material used.

SUBMITTAL OF THE REPORT FORM:

The original form and copies shall be made and submitted to the MDE, local environmental health agency, the Maryland Geological Survey and the well owner.

Submit the original and Maryland Geological Survey copy to:

Maryland Department of the Environment
Water Management Administration
Waste Water Permits Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1718

Additional copies shall be mailed to the:

1. **Local County Environmental Health Agency; and,**
2. **Well Owner.**

ADDITIONAL INFORMATION:

To obtain a copy of the Well Construction Regulations, COMAR 26.04.04, Abandonment Standards, .11, go to the Division of State Documents web site at www.dsd.state.md.us , under "COMAR Online", search for "26.04.04.11".

If you have any questions please feel free to contact your local county environmental health agency or call Ms. Swatzbaugh, MDE, at 410-537-3784.

REFERENCES:

Code of Maryland Regulations (COMAR), 26.04.04 -Well Construction, Regulation 11 – Abandonment Standards.

Annotated Code of the Public General Laws of Maryland, Environment Article 9-1309.

ATTACHMENT C – ALTERNATE SAMPLING METHODS

Attachment C – Alternate Sampling Methods

Variations on the Low-Flow Protocol for Low-Yielding Wells

Wells screened in low yield formations such as silt or clay deposits may not yield sufficient water for purging (e.g., 100 mL/min) without more than 0.1 m of drawdown. In these cases, one of the modified low flow methods (depending on the water level in relation to the well screen) described below will be used. Constant pumping is recommended when implementing these methods; field parameters and water depth will be measured at 5-minute intervals or at the end of every purge cycle, although it may be difficult to obtain stable measurements of certain parameters (i.e., DO, ORP, turbidity).

Alternative Method 1: Less than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at the mid point of the well screen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. Pumping will cease until the water level in the well equilibrates to static conditions. Purging will be repeated in this manner until a minimum of one casing volume is removed from the well. The well will then be allowed to recover sufficient volume to collect the required ground water sample from the midpoint of the screened interval, within 24 hours of the last purging event.

Alternative Method 2: More than half the casing volume is located above the well screen.

The well will be purged with the pump intake located at midscreen at a rate no greater than 500 mL/min until the water level reaches the top of the well screen. This will remove at least one-half of a casing volume of water from the well. The well is then allowed 8 hours to recover, after which time a volume of water equal to the casing volume of the screened interval will be removed, removing approximately a full casing volume during the two purging events. Directly following the second purging event, the required ground water sample is to be collected from the midpoint of the screened interval.

Other modifications of the low-flow protocol may be required on a site-specific basis. Low-recharge wells screened across the water table are not amenable to either of the methods described above. Extremely low recharge wells may also not be practical to sample using any of the cited modifications. In this extreme case, the monitoring wells that have been identified as low-yield will be evacuated of all casing water and re-sampled as soon as sufficient recharge has entered the well to provide a sample. Samples for sulfide will be taken last of the bio-related parameters. If there is insufficient water to fill all samples, sulfide will be taken at a later time after the well has recharged. Data from such wells will be qualified to indicate that bias may be present.

FMC Corporation

Appendix E
Off-Site Use Control Plan
Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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1 USE CONTROL RELATIONSHIP MATRIX

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B DRAFT ENVIRONMENTAL COVENANT FOR FLEET PROPERTY

LIST OF ACRONYMS

CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
COMAR	Code of Maryland Regulations
COC(s)	Constituent(s) of Concern
Dana	Dana Transport Trucking Terminal
ERM	Environmental Resources Management
Fleet	Fleet Transit, Inc.
FMC	FMC Corporation
FDRTC	Final Decision and Response to Comments
HASP	Health and Safety Plan
MDE	Maryland Department of the Environment
MIZOD	Maritime Industrial Zoning Overlay District
O&M	Operation & Maintenance
OSHA	Occupational Safety and Health Administration
UECA	Uniform Environmental Covenants Act
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Off-Site Use Control Plan for submittal to the United States Environmental Protection Agency (USEPA) with respect to the Dana Transport Trucking Terminal (Dana) property located at 1550 East Patapsco Avenue, Baltimore, Maryland and the Fleet Transit, Inc. (Fleet) property located at 3400 Fairfield Road, Baltimore, Maryland. The use controls for these properties are intended to mitigate risk associated with impacts to the properties related to ground water conditions on the FMC property located at 1600 East Patapsco Avenue, Baltimore, Maryland.

The FDRTC requires that ground water contamination on the FMC property be controlled to prevent migration onto adjacent properties at unacceptable concentrations (USEPA, 2011). As described in the Corrective Measures Implementation (CMI) Work Plan, source removal and capping will be conducted to remediate ground water quality. However, additional measures are warranted to protect the health of workers on the Dana and Fleet properties. Therefore, this Off-Site Use Control Plan has been prepared to meet the requirements of the FDRTC.

This Off-Site Use Control Plan has been prepared to conform to two USEPA guidance documents issued in December 2012:

- Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites (USEPA, 2012); and
- Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites (USEPA, 2012a).

1.1 PURPOSE

FMC proposes that Dana comply with the following use controls until USEPA determines that the use control is no longer necessary for the protection of human health or the environment:

1. Shallow ground water beneath the property shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at the property without prior USEPA approval to prevent inadvertent exposure to the contaminated ground water;
3. The property shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use; and

4. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a Health and Safety Plan (HASP).

FMC proposes that Fleet comply with the following use controls until USEPA determines that the use control is no longer necessary for the protection of human health or the environment:

1. Shallow ground water beneath the property shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at the property without prior USEPA approval to prevent inadvertent exposure to the contaminated ground water;
3. The property shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use;
4. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP; and
5. A vapor control system, the design of which shall be approved in advance by USEPA, shall be installed in each new structure constructed at the property.

The purpose of this Off-Site Use Control Plan is to identify the specific steps required to implement, monitor, and enforce the above-listed use controls, and specify a schedule for implementation and reporting of the controls. The Off-Site Use Control Plan has been prepared by FMC based on the understanding that Fleet and Dana will agree to accept the proposed use controls. FMC will be the primary party responsible for maintaining and enforcing compliance with use controls. In the event that FMC, Dana, or Fleet transfers ownership of their property, this plan will be revised and resubmitted to USEPA to define the responsibilities of the new land owner(s).

This Off-Site Use Control Plan is considered to be a 90 percent design submittal and once approved by USEPA will be finalized to the 100 percent level and implemented to the extent agreements with the two off-site landowners can be reached. Changes to this Off-Site Use Control Plan made in response to negotiation of agreements with the two off-site landowners will be communicated to USEPA.

1.2 PLAN ORGANIZATION

The remainder of the Off-Site Use Control Plan is organized in accordance with USEPA guidance as follows (USEPA, 2012):

- **Section 2.0 – Site Details.** This section describes the basic Site characteristics, the Site history, property information, stakeholders, and mapping of the use control boundaries.
- **Section 3.0 – Implementation of Use Controls.** This section identifies the proposed use controls that will be needed to ensure long-term protection of human health and the environment, describes how the use controls will be implemented, and presents the schedule for the implementation of the use controls.
- **Section 4.0 –Monitoring, Reporting and Enforcement.** This section describes how the use controls will be monitored and enforced to assure continued protection of human health and the environment.
- **Section 5.0 –Modification and Termination.** This section describes how the use controls can be modified or terminated.

2.0 SITE DETAILS

2.1 SITE DESCRIPTION

The Dana property is located at 1550 East Patapsco Avenue in Baltimore, Maryland (Figure 1). The property is approximately 7 acres in size and is designated as Ward 25, Section 07, Block 7335D, Lot 006.

The Fleet property is located at 3410 Fairfield Road in Baltimore, Maryland (Figure 1). The property is approximately 17 acres in size and is designated as Ward 25, Section 07, Block 7335D, Lot 004.

The use controls are proposed to be implemented throughout the entirety of the Dana and Fleet properties, as opposed to limiting the application of use controls to the areas that overlies the impacted ground water. However, this approach will need to be negotiated with the property owners.

2.2 SITE CONDITIONS

2.2.1 *Current and Reasonably Anticipated Future Conditions*

The Dana property is currently used for a trucking terminal and is developed with one building that contains an office, maintenance shop, and truck wash area.

The Fleet property is currently used for outdoor vehicle storage. The property consists of a paved parking lot, and no buildings are present.

No planned changes in use of either property are known or anticipated currently. However, both properties are zoned for industrial use and any future uses can be assumed to remain industrial.

2.2.2 *Subsurface Conditions*

No soil impacts attributable to the FMC property are present on the two off-site properties.

Perched ground water is present beneath both the Dana and Fleet properties. The perched water table is located at depths ranging from approximately 0.5 to 6 feet below ground surface. The perched water table on the Fleet property intercepts the southern drainage trench on the south side of the Fleet property, suggesting that they are hydraulically connected. Water quality data collected

from the trench supports this interpretation. Ground water flow in the perched aquifer is generally towards the west at both the Dana and Fleet properties.

Shallow ground water at and in the vicinity of the Dana and Fleet properties is defined as the Pleistocene aquifer. This aquifer consists of the Pleistocene alluvial deposits that locally overlie the deeper Patapsco Formation. Shallow ground water occurs at the Dana and Fleet properties in the Pleistocene sediments. The water table in the Pleistocene aquifer is located at depths ranging from approximately 3.5 to 11 feet below ground surface. Ground water flow in the Pleistocene aquifer is generally towards the north at the Dana property and north and east at the Fleet property.

Ground water characterization at the Dana and Fleet properties has identified several volatile organic compounds (VOCs) present at the northeastern portion of the Dana property and the southern portion of the Fleet property in both the perched and shallow aquifers. The results of the ground water sampling events are summarized in the Supplemental Site Investigation Report for the North Parcel (ERM, 2014). A number of VOCs were detected in ground water; however, the constituents of concern (COCs) contributing to unacceptable risk include benzene, chlorobenzene, and 1,1,2-trichloroethane. Chlorobenzene was the most consistently detected VOC in ground water across the Dana and Fleet properties.

Ground water investigation on the FMC property indicates that the deeper Patapsco Formation is not impacted, and thus ground water contamination is limited to the overlying perched and shallow aquifers. Ground water quality conditions in the Patapsco Formation beneath the Fleet and Dana properties are unknown. The use controls related to ground water on the off-site properties will be restricted to the perched and shallow zones. No use restrictions are proposed for the Patapsco Formation.

Soil gas samples collected on the Dana property adjacent to the enclosed office during implementation of the Supplemental SAP Addendum (ERM, 2014) indicated that chlorobenzene was not detected above the method detection limit. Therefore, the potential for vapor intrusion impacts from chlorobenzene in perched and shallow ground water on the Dana property is low, and therefore vapor mitigation on the Dana property is not warranted. There is a potential for vapor intrusion to occur in buildings placed on the northern portion of North Parcel and on the Fleet property.

2.2.3 *Risk Exposure Pathways*

Under a commercial/industrial use scenario, there are two risk exposure pathways, namely Site workers and construction workers. The required use controls will eliminate the following exposure pathways:

- **Site Worker**. Site workers at the Fleet property could be exposed to vapors emanating from perched ground water if buildings are constructed on the property in the future. Additionally, Site workers at both the Dana and Fleet properties could be exposed to impacted ground water if Site ground water was used for potable supply.
- **Construction Worker**. A construction worker could be exposed to impacted ground water while working in a trench excavated on the impacted portion of both off-site properties.

2.3 BASIS FOR USE CONTROLS

Use controls at the Dana and Fleet properties are necessary to protect future workers and construction workers. A use control will ensure that the properties are not used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use.

Protection of Site Workers

Use controls are necessary to protect Site workers as follows:

1. Shallow ground water beneath both properties shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at both without prior USEPA approval, to prevent inadvertent exposure to the contaminated ground water; and
3. A vapor control system at the Fleet property shall be installed in each new structure constructed at the Facility to prevent inadvertent exposure to the vapors.

Protection of Construction Workers

Use controls are necessary to protect construction workers as follows:

1. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP.

2.4 *PROPERTY INFORMATION AND STAKEHOLDER CONTACTS*

FMC, the responsible party, is the current owner of the three parcels comprising the FMC property located at 1600 East Patapsco Avenue, Baltimore, Maryland and is listed in land and property tax records as:

Food Machinery & Chemical Corp (FMC Corporation)
1735 Market Street
Philadelphia, PA 19103

Fleet is the current owner of the property located at 3410 Fairfield Road, Baltimore, Maryland and is listed in the land and property tax records as:

Fleet Properties LLC
3400 Fairfield Road
Baltimore, MD 21226

Dana is the current owner of the property located at 1550 Fairfield Road, Baltimore, Maryland and is listed in the land and property tax records as:

Northeast Real Property Holding of Baltimore Maryland Limited
210 Essex Ave E
Avenuel, NJ 07001

2.5 *USE CONTROL BOUNDARY*

Use controls are initially proposed to be applied to the entirety of the Dana and Fleet properties as shown on Figure 2. However, use controls may be applied to portions of the two properties that overlie impacted ground water based on input received from the two property owners. Application of use controls will accommodate the future industrial use of any part of the off-site properties, whilst ensuring the protection of human health and the environment.

3.0 IMPLEMENTATION OF USE CONTROLS

3.1 ENVIRONMENTAL COVENANT

FMC will request Dana and Fleet to implement the use controls through the application of a proprietary control, namely the recordation of an environmental covenant onto each property deed. In this manner, the use controls would "run with the land" so that future owners would be bound by these restrictions. In Maryland, proprietary controls are applied under the authority of the April 2005 state statute titled *Uniform Environmental Covenants Act* (UECA). UECA is codified in Maryland Environment Code §1-801 to §1-815. The law applies a nationally standardized approach to drafting, documenting and enforcing activity and use limitations on contaminated sites in Maryland. The law includes provisions for defining the content of the covenant, notice, recording and enforcement of the covenant, and notice to subsequent holders of interest. The USEPA has the authority to enforce land use restrictions contained within each environmental covenant.

UECA defines the "holder" as the grantee of the environment covenant. The grantee holds the covenant or title to the real property interest and has primary responsibility for maintaining and enforcing use controls.

The draft Environmental Covenants for the Dana and Fleet properties that conform to Maryland's UECA law are provided in Attachments A and B, respectively, and are being submitted to EPA for review and approval. The environmental covenants include the following information:

- **Holder**. Fleet and Dana will be the holders of their respective environmental covenants. FMC will maintain and enforce the use controls, and expend the necessary funds to maintain and enforce the controls. Further, FMC is accountable to maintaining use controls through the Permit. USEPA will be a third party beneficiary and thus will have the authority to enforce the environmental covenant.
- **Legal Description of Restricted Area**. The metes and bounds description of the Dana and Fleet properties and a map showing the property boundaries are appended to each covenant and included in Attachments A and B, respectively.
- **Use Controls for the Property**. The use controls are listed in the draft environmental covenants.
- **Executed by Regulatory Authority**. FMC, Dana, Fleet, and USEPA will need to execute the environmental covenants.
- **Maryland Department of Environment (MDE) Registry**. As described in Section 3.2.2 below, the environmental covenants, after recordation at the

Baltimore City Land Records Office, need to be submitted to the MDE Registry of Environmental Covenants.

- **Miss Utility**. As described in Section 3.2.2 below, the environmental covenants, after recordation at the Baltimore City Land Records Office, need to be submitted to Miss Utility.
- **Distribution**. The final recorded environmental covenants need to be provided to the USEPA and the Baltimore City Planning Department.

3.2 SECONDARY CONTROLS

The effectiveness of use controls can be improved if different types of controls are layered or implemented at the same time. In this case, governmental controls and informational devices are layered with the environmental covenant. The governmental controls and informational devices discussed below are considered secondary to the environmental covenant and do not preclude or diminish FMC's responsibility to maintain and enforce the environmental covenant.

3.2.1 Government Controls

The properties are located within the City of Baltimore, and as such, are subject to two government controls, namely zoning restrictions regarding land use and a prohibition on ground water use.

Zoning

The properties are located within an area that is zoned heavy industrial (M-3). M-3 zoning restricts site use to a wide variety of intense industrial uses, including manufacturing, shipping, and incinerators.

Additionally, the properties are located within the City of Baltimore's Maritime Industrial Zoning Overlay District (MIZOD, Ordinance 04-804). MIZOD was enacted in 2004 to preserve deep-water frontage of the Port of Baltimore and reserve these areas for industrial use. The MIZOD protects the Fairfield area from increased pressure to convert waterfront properties to mixed-use residential and commercial properties. Preservation is accomplished by controlling the uses in the overlay area as follows:

- Preventing conversion of properties from industrial to mixed use;
- Prohibiting hotels, motels, taverns and all other uses not permitted in an M-3 district;
- Allowing offices, businesses, and restaurants as accessory uses only.

City Health Department Prohibition on Ground Water Use

Code of Maryland Regulation (COMAR) 26.03.01.05 states "an individual water supply or individual sewerage system may not be permitted to be installed where an adequate community water or sewerage facility is available." This regulation applies to all areas within the City of Baltimore because the City provides adequate water service. The Baltimore City Health Department uses this regulation to deny a variance to use ground water, and defer requests for potable ground water use to the Maryland Department of Environment Water Management Administration (Tolson, 2013 personal communication).

3.2.2 *Informational Devices*

MDE Registry

MDE is responsible for maintaining a registry of environmental covenants and any amendment or termination of covenants under the Maryland UECA statute. The benefit of the registry is to make information regarding the use controls available on the internet to entities that are interested in locating a facility at the properties.

MDE will enter the environmental covenant information once the deed recordation is complete into its Registry of Environmental Covenants and Environmental Site Mapping System to ensure that the environmental covenant remains registered with the MDE and appears on applicable state databases. Information regarding the registry and mapping system is available at http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/Pages/programs/landprograms.

Miss Utility

Maryland operates a one-call system called Miss Utility. Anyone who conducts intrusive activities is required by the Maryland Underground Facilities Damage Prevention Law (Miss Utility Law) to contact Miss Utility. The Maryland Underground Facilities Damage Prevention Authority (Authority) enforces the Miss Utility Law, and the members of the Authority are approved by the Governor. The creation of the Authority, which is a stakeholder-run organization, not a state agency, was approved by the statute. The law gives the Authority the power to enforce the Miss Utility Law in Maryland.

The environmental covenants for each property, after recordation at the Baltimore City Land Records Office, needs to be submitted to Miss Utility. If someone submits a ticket request to Miss Utility to conduct intrusive activities on the Dana or Fleet properties, FMC will be notified, and FMC will be required to contact the submitter

within two business days and provide them with the information regarding the scope of the use controls and to notify the property owner.

3.3 *USE CONTROL RELATIONSHIP MATRIX*

Table 1 summarizes the use controls and illustrates the relationship between the required use controls and how the use controls will be implemented.

3.4 *IMPLEMENTATION EVENT AND DATE*

The Environmental Covenant will be implemented in accordance with the following schedule:

- USEPA accepts and executes the Environmental Covenants presented in Attachment A and Attachment B – date to be determined;
- Dana, Fleet, and FMC begin full compliance with the Environmental Covenants - upon USEPA execution of the covenants;
- Dana, Fleet, and FMC submit the fully executed Environmental Covenants to the Baltimore City Land Records Office for recordation on the property deeds – within 30 days of receipt of the signed Environmental Covenant from USEPA;
- Dana, Fleet, and FMC submit the fully executed and recorded Environmental Covenants to the USEPA, Baltimore City Planning Department, the MDE Environmental Covenant Registry, and Miss Utility – within 30 days of receipt of the recorded Environmental Covenant from the Baltimore City Land Records Office; and
- FMC reports to USEPA in the Annual Progress Report (see Section 4.1) monitoring actions taken to ensure compliance with off-site use controls and any actions taken to rectify non-compliance - by 30 January of each year starting upon execution of the Environmental Covenants.

4.0 MONITORING, REPORTING AND ENFORCEMENT

4.1 MONITORING AND REPORTING

Monitoring

FMC will be responsible for monitoring the activities and development at the properties to ensure compliance with the use controls. Monitoring will ensure that use controls: 1) remain in place; 2) are adhered to; and 3) remain effective at protecting human health, the environment, and the remedy. FMC will establish the authority to inspect the operations of off-site users for compliance with use controls, including the ability to enter buildings or restricted areas, in lease or sale agreements. FMC will define requirements for submittals of engineering designs related to vapor control systems and earth moving activities in lease or sale agreements.

FMC will conduct the monitoring activities listed below.

- **Annual Inspection**. A comprehensive annual inspection will be conducted to evaluate the status of the off-site use controls and identify whether deficiencies or inconsistencies with the off-site use controls exist. The annual inspection will include meeting with individual users of the Dana and Fleet properties, making inquiries to the users regarding operations and use of the properties, and physical inspection of the buildings and properties. An inspection report will be completed to document the findings. Specifically, the annual inspection will verify that:
    - No wells have been installed that were not approved by USEPA (only FMC will install wells related to the remediation of ground water);
    - Ground water is not being used for potable purposes;
    - No buildings on-site are being used for any purpose other than industrial use (i.e., no dormitory or overnight accommodations are being provided);
    - Earth moving activities including construction and drilling that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP;
    - With respect to the Fleet property, no vapor control systems approved in advance by the USEPA are installed and being maintained properly in accordance with the maintenance and inspection procedures described in the CMI Work Plan.

- **Periodic Inspections**. Periodic inspections or meetings will be conducted throughout the year when actions are proposed on the Dana and/or Fleet properties that could compromise the integrity of an off-site use control and warrant reassessment of the effectiveness of the off-site use controls. FMC will require Dana and Fleet property users in lease or sale agreements to notify FMC in a timely manner of triggering events, and to provide sufficient information to support the inspection and review of the proposed event. An inspection report will be completed to document the findings. Periodic inspections will be conducted when the following triggering events occur:
    - Changes in property use are proposed, such as planned redevelopment activities or property sale;
    - New building construction or a changed use of an existing building is proposed;
    - Building alteration or demolition is proposed;
    - Earth moving activities that could potentially expose construction workers to ground water are proposed; and
    - Utility installation or repair is proposed.
- **Engineering Submittal Review**. FMC will review contractor design drawings and engineering submittals related to installation or alterations of vapor control systems, or activities that will entail disturbance of soil. Design submittals will be prepared by contractors hired by the developers.
    - **Vapor Control System.** FMC will verify that vapor control systems are designed and installed in a manner that conforms to the design specified in the CMI Work Plan. FMC will verify that the Operation and Maintenance (O&M) plan is prepared and conform to the CMI Work Plan. Once the design and O&M plans are determined to conform to the CMI Work Plan, FMC will coordinate the review and approval of the plans with USEPA. FMC will ensure that construction of the vapor controls does not proceed until USEPA approval is obtained. FMC will conduct a field inspection during the construction of the vapor control system to ensure the system is installed in accordance with the USEPA-approved design, and obtain copies of as-built drawings that document the construction of the vapor control system.
    - **Training and HASP**. FMC will verify that earth moving activities including construction and drilling that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP. FMC will review proposed plans for earth moving activities, and ensure

that contractors performing the activities have properly health and safety trained personnel and conduct their work under the direction of the HASP.

Reporting

FMC will report each year to the USEPA the findings of the annual and periodic off-site use control monitoring in the Annual Progress Report on the corrective measures remedy performance identified in Part II.C of the Permit. The Annual Progress Report is due to USEPA by 30 January of each year. Copies of inspection reports or memoranda will be appended to the Annual Progress Report. The information presented in the Annual Progress Report will describe:

- An overall assessment of compliance of Site users with the off-site use controls;
- Specific activities conducted to design and install vapor control systems, including contractor submittals received and reviewed and references to USEPA approvals; and
- Well installation activities conducted with USEPA approval.

FMC will include in the Annual Progress Report a critical evaluation of the effectiveness of off-site use controls in protecting human health and the environment and ensuring the integrity of engineering controls. Proposed changes in the wording or content of off-site use controls will be identified as necessary. Part of this critical evaluation will include the review of the content of the CMI Plan in supporting compliance with off-site use controls, and any proposed changes to this document to improve its effectiveness.

FMC will notify USEPA in writing of any actions that require USEPA approval, including review of plans for new vapor control systems or alterations of existing vapor control systems and information regarding well installation activities.

FMC will notify USEPA in writing of any identified breaches or insufficiencies associated with compliance of off-site use controls. The initial notification will include proposed actions and a timeframe to rectify the breach or insufficiency. Actions taken to resolve non-compliance will be described in subsequent submittals to USEPA. Additionally, non-compliance with use controls will be summarized in the Annual Progress Report, and actions taken to resolve non-compliance will be described.

4.2 ENFORCEMENT

FMC, as the responsible party, has primary enforcement authority to address potential problems involving improper or incomplete implementation, maintenance or breaches

of the off-site use controls. FMC is the entity that is responsible for rectifying a breach or violation of an off-site use covenant. FMC will identify any enforcement issues, and work cooperatively with the Dana and Fleet property users to rectify the non-compliance. FMC will incorporate notification requirements for changes to the off-site properties. FMC may request assistance from USEPA to enforce compliance by off-site users with off-site use controls, as described below.

USEPA holds two enforcement mechanisms for ensuring compliance with use controls. First, USEPA can request FMC at any time to take action to resolve non-compliance with off-site use controls. The obligation to implement and maintain the specified off-site use controls is enforceable by USEPA through the provisions of the Permit and, in the event of non-compliance, USEPA has the authority under the Permit to enforce compliance. As a last resort, judicial enforcement or a court order imposing the off-site use controls may be sought against a property user if off-site use controls are not complied with. Second, as a third party beneficiary to the environmental covenants, USEPA holds direct enforcement authority for off-site use controls, and can go directly to a property user to address non-compliance.

5.0 MODIFICATION AND TERMINATION

5.1 MODIFICATIONS

Off-site use controls may be modified if they are deemed to be ineffective in protecting human health, the environment, or the remedy, or are determined to be overly restrictive given improved off-site property conditions. Off-site use controls may need to change to reflect changes in site conditions. Modification of the off-site use controls will require the following steps.

1. FMC needs to make a request to USEPA for modifications, which will include an explanation as to why the off-site use control needs to be modified and propose specific modifications to the wording;
2. USEPA needs to accept the proposed modifications, or adjust the proposed modifications to satisfy their needs; and
3. FMC needs to file a revised environmental covenant to be recorded on the deed(s).

5.2 TERMINATION

Termination of off-site use controls could occur when cleanup objectives have been met such that off-site use controls are no longer required to ensure protectiveness of human health and the environment. The off-site use controls specified in the CMI Work Plan are intended to remain in-place for as long as necessary to ensure the long-term protection of the future users of the properties. Once implemented, only USEPA has the authority to terminate a use control. The use controls will remain until USEPA, in its sole discretion, determines and notifies FMC in writing that a use control is no longer necessary for the protection of human health or the environment.

REFERENCES

Environmental Resources Management (ERM). 2014. Supplemental Site Investigation Report for the North Parcel. Former Agricultural Products Group Facility. Prepared for FMC Corporation, dated October 20, 2014.

Tolson, Clayton, 2013. Personal communication between Clayton Tolson, Baltimore City Health Department, Environmental Issues/Permits and Christina Lewis, ERM. 22 March 2013.

USEPA, 2011. Final Decision and Response to Comments, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 14 April 2011.

USEPA, 2012. Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites, EPA-540-R-09-002, December 2012.

USEPA, 2012a. Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, EPA-540-R-09-002, December 2012.

USEPA, 2013. Permit for Corrective Action, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 30 January

FIGURES

FIGURE 1
SITE PLAN
FMC BALTIMORE,
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

W:\Spencer's Projects\Drawings\FMC\0340126\Figure 1 - Site Plan.dwg

SR/EMF - 05/24/16

ERM, INC.

FIGURE 2
MAP USE OF CONTROL BOUNDARY
FMC BALTIMORE,
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

N

LEGEND

USE CONTROL BOUNDARY

200 100 0 200

SCALE IN FEET

AERIAL SOURCE: BING MAPS, 2010

W:\Spencer's Projects\Drawings\FMC\0340126\Figure 2 – Use Control Map.dwg

SR/EMF – 09/08/16

ERM, INC.

TABLE

Table 1
Use Control Relationship Matrix
FMC Baltimore Former Agricultural Products Group Facility

			Use Control Instruments		
Use Control	**Property**	**Risk Management**	**Proprietary**	**Government**	**Informational**
Ground water shall not be used for potable purposes	Dana & Fleet	Prevent exposure to contaminated ground water	Environmental Covenants with Dana and Fleet designated as grantees and USEPA as signatory to be recorded in Baltimore City Land Records Office	COMAR 26.03.01.05 prohibits use of individual water supply where adequate community water supply exists	MDE Environmental Covenant Registry
Well drilling is prohibited	Dana & Fleet	Prevent exposure to contaminated ground water	Environmental Covenants with Dana and Fleet designated as grantees and USEPA as signatory to be recorded in Baltimore City Land Records Office		Miss Utility notifications; MDE Environmental Covenant Registry
Properties shall not be used for any purpose other than industrial	Dana & Fleet	Prevent residential occupancy that would change risk profile	Environmental Covenants with Dana and Fleet designated as grantees and USEPA as signatory to be recorded in Baltimore City Land Records Office	Site is zoned M-3; Heavy Industrial	MDE Environmental Covenant Registry
Earth moving activities that may expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a HASP	Dana & Fleet	Prevent exposure to contaminated soil and ensure proper management of contaminated soil	Environmental Covenants with Dana and Fleet designated as grantees and USEPA as signatory to be recorded in Baltimore City Land Records Office		Miss Utility notifications; MDE Environmental Covenant Registry
A vapor control system shall be installed in each new structure	Fleet	Prevent exposure to volatile vapors in a building	Environmental Covenant with Fleet designated as grantee and USEPA as signatory to be recorded in Baltimore City Land Records Office		MDE Environmental Covenant Registry

ATTACHMENT A – DRAFT ENVIRONMENTAL COVENANT FOR DANA PROPERTY

DRAFT ENVIRONMENTAL COVENANT

HOLDER: Northeast Real Property Holding of Baltimore Maryland Limited
PROPERTY ADDRESS: 1550 East Patapsco Avenue, Baltimore, Maryland

This Environmental Covenant is executed pursuant to the provisions of Subtitle 8, Title 1 of the Environmental Article, Ann. Code of Md. (2007 Repl. Vol.). This Environmental Covenant subjects the Property identified in Paragraph l to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the United States Environmental Protection Agency (USEPA).

1. Property Affected. The property affected (Property) by this Environmental Covenant is located in the Baltimore City, Maryland.

The postal street address of the Property is: 1600 East Patapsco Avenue, 1550 East Patapsco Avenue.
The County Land Records Deed Reference: M.L.P No. 3066, folio 299-302
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: to be determined.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. Property Owner/Holder. Ronald Dana/Northeast Real Property Holding of Baltimore Maryland Limited is the owner of the Property. The mailing address of the Owner is: 210 Essex Avenue E, Avenuel, New Jersey 070001.

3. Holder/Grantee. Ronald Dana/Northeast Real Property Holding of Baltimore Maryland Limited.

4. Regulatory Program(s) Issuing Agency Determination. The following regulatory program(s) is responsible for having issued a determination requiring the use of this Environmental Covenant:

USEPA under the authority of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations promulgated thereunder and set forth at 40 CFR, Parts 260-271, issued Corrective Action Permit No. MDD0030781875 to FMC Corporation.

5. Activity & Use Limitations. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

1. Ground water beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by USEPA in the FDRTC;
2. Well drilling is prohibited at the Facility without prior USEPA approval, to prevent inadvertent exposure to the contaminated ground water and adverse effects to the Final Remedy selected by USEPA in the FDRTC;
3. The Facility shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use; and
4. All earth moving activities on Facility property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a health and safety plan (HASP).

6. Notice of Limitations in Future Conveyances. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. Access by the Agency. In addition to any rights already possessed by the Agency, this Environmental Covenant grants to the USEPA a right of access of the Property to implement or enforce this Environmental Covenant.

8. Recordation & Filing with Registry. The Owners shall file a Notice of Environmental Covenant in the Baltimore City Land Records Office following the execution of the covenant and send proof of the recording to the Agency within 30 days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of environmental covenants maintained by the Maryland Department of the Environment: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

9. Termination or Modification. This environmental covenant may only be terminated or modified in accordance with Section 1-809 of the Environmental Article, Ann. Code of Md. (2007 Repl. Vol.).

10. Agency's Address. Communications with the Agency regarding this Environmental Covenant shall be sent to: U.S. Environmental Protection Agency, Region III, RCRA Corrective Action, Office of Remediation, 1650 Arch Street, Philadelphia, PA 19103.

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

FMC Corporation

Date:

By:
Name: [Insert Authorized Signatory]
Title: [Insert Contact Person's Title]

APPROVED, by United States Environmental Protection Agency

Date:

By:
Name:
Title:

STATE OF MARYLAND)
COUNTY OF Baltimore City) SS:

On this _____ day of _____, 2016, before me, the undersigned authorized Member and Holder, [Insert Name(s) of Holder], personally appeared [Insert Authorized Signatory], who acknowledged [Insert "himself" or "herself", as appropriate] to be the Managing Member of [Insert Name(s) of Holder], and being authorized to do so, acknowledged that he executed same on behalf of the Holder for the purposes therein contained.
In witness whereof, I hereunto set my hand and official seal.

Notary Public
My Commission Expires:

ATTACHMENT B – DRAFT ENVIRONMENTAL COVENANT FOR FLEET PROPERTY

DRAFT ENVIRONMENTAL COVENANT

HOLDER: Fleet Properties, LLC
PROPERTY ADDRESS: 3410 Fairfield Road, Baltimore, Maryland

This Environmental Covenant is executed pursuant to the provisions of Subtitle 8, Title 1 of the Environmental Article, Ann. Code of Md. (2007 Repl. Vol.). This Environmental Covenant subjects the Property identified in Paragraph l to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the United States Environmental Protection Agency (USEPA).

1. Property Affected. The property affected (Property) by this Environmental Covenant is located in the Baltimore City, Maryland.

The postal street address of the Property is: 3410 Fairfield Road.
The County Land Records Deed Reference: M.L.P No. 3179, folio 029-035
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: to be determined.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. Property Owner/Holder. Fleet Properties, LLC is the owner of the Property. The mailing address of the Owner is: 3400 Fairfield Road, Philadelphia, Pennsylvania 19103.

3. Holder/Grantee. Fleet Properties, LLC.

4. Regulatory Program(s) Issuing Agency Determination. The following regulatory program(s) is responsible for having issued a determination requiring the use of this Environmental Covenant:

USEPA under the authority of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations promulgated thereunder and set forth at 40 CFR, Parts 260-271, issued Corrective Action Permit No. MDD0030781875 to FMC Corporation.

5. Activity & Use Limitations. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

1. Ground water beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by USEPA in the FDRTC;
2. Well drilling is prohibited at the Facility without prior USEPA approval, to prevent inadvertent exposure to the contaminated ground water and adverse effects to the Final Remedy selected by USEPA in the FDRTC;
3. The Facility shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use;
4. All earth moving activities on Facility property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a health and safety plan (HASP); and
5. A vapor control system, the design of which shall be approved in advance by USEPA, shall be installed in each new structure constructed at the property.

6. Notice of Limitations in Future Conveyances. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. Access by the Agency. In addition to any rights already possessed by the Agency, this Environmental Covenant grants to the USEPA a right of access of the Property to implement or enforce this Environmental Covenant.

8. Recordation & Filing with Registry. The Owners shall file a Notice of Environmental Covenant in the Baltimore City Land Records Office following the execution of the covenant and send proof of the recording to the Agency within 30 days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of environmental covenants maintained by the Maryland Department of the Environment: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

9. Termination or Modification. This environmental covenant may only be terminated or modified in accordance with Section 1-809 of the Environmental Article, Ann. Code of Md. (2007 Repl. Vol.).

10. Agency's Address. Communications with the Agency regarding this Environmental Covenant shall be sent to: U.S. Environmental Protection Agency, Region III, RCRA Corrective Action, Office of Remediation, 1650 Arch Street, Philadelphia, PA 19103.

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

FMC Corporation

Date:

By:
Name: [Insert Authorized Signatory]
Title: [Insert Contact Person's Title]

APPROVED, by United States Environmental Protection Agency

Date:

By:
Name:
Title:

STATE OF MARYLAND)
COUNTY OF Baltimore City) SS:

On this _____ day of _____, 2016, before me, the undersigned authorized Member and Holder, [Insert Name(s) of Holder], personally appeared [Insert Authorized Signatory], who acknowledged [Insert "himself" or "herself", as appropriate] to be the Managing Member of [Insert Name(s) of Holder], and being authorized to do so, acknowledged that he executed same on behalf of the Holder for the purposes therein contained.
In witness whereof, I hereunto set my hand and official seal.

Notary Public
My Commission Expires:

FMC Corporation

Appendix F

Stormwater Management Plan

Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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LIST OF ACRONYMS

BMPs	Best Management Practices
CFR	Code of Federal Regulations
City	Baltimore City
COMAR	Code of Maryland Regulations
DPW	Department of Public Works
ESC	Erosion and Sediment Control
ESD	Environmental Site Design
FMC	FMC Corporation
ft^2	square feet
MDE	Maryland Department of the Environment
NAPL	Non-aqueous Phase Liquid
NOI	Notice of Intent
The Plan	Construction Stormwater Management Plan
USEPA	United States Environmental Protection Agency
yd^3	cubic yards

1.0 STORMWATER MANAGEMENT PLAN OVERVIEW

FMC Corporation (FMC) has prepared this Stormwater Management Plan (the "Plan") as a part of the Corrective Measures Implementation (CMI) Work Plan for the North Parcel of the property located at 1600 East Patapsco Avenue in Baltimore, Maryland. The North Parcel is the 23-acre portion of the 90-acre property north of the 67-acre former Main Plant (1701 East Patapsco Avenue).

The Corrective Measures Study (CMS) Report for the North Parcel submitted to the United States Environmental Protection Agency (USEPA) on 21 January 2016, and approved by USEPA on 8 February 2016, recommended the removal and disposal of non-aqueous phase liquid (NAPL)-impacted soils in the chlorobenzene source area and placement of a low permeability cover (i.e., asphalt cap, building, concrete or landscape area) on the six-acre northern portion of the North Parcel to reduce infiltration of rain water into the subsurface. The low permeability cover remedy will be incorporated into the redevelopment of the six-acre portion of the North Parcel. The nature of the redevelopment has not yet been determined, but may include Site improvements, such as addition of buildings or parking areas.

This Plan provides a conceptual overview of the City of Baltimore and State of Maryland stormwater management requirements that may need to be implemented during and after the redevelopment of the 6-acre northern portion of the North Parcel. The Plan is considered to be a 50 percent design submittal and will need to be updated by the developer after a specific Site development plan is known and specific stormwater controls can be identified.

1.1 SITE DESCRIPTION

The six-acre northern portion of the North Parcel is generally flat and contains both pervious and impervious surfaces. The current impervious surfaces include asphalt parking areas and roadways near the gravel-covered footprint of the former building 91 foundation on the eastern portion of the Site. The western portion of the Site is a pervious area primarily consisting of grass with trees along the western edge that borders the Dana Suttles Transportation property. The Site is bordered to north by Fleet Transit, Inc.'s asphalt parking area used for outdoor vehicle storage. The southern portion of the Site is bordered by the 17-acre southern portion of the North Parcel.

1.2 STORMWATER MANAGEMENT PHASES

Stormwater management is required throughout all phases of project development. The developer will submit plans to demonstrate how stormwater will be managed during the proposed Site redevelopment. After the Site redevelopment plans are approved, the developer can begin development of the Site. The developer will incorporate controls to ensure stormwater is not impacted during the construction phase of the development process.

After the Site is developed, the Site operator may be required to obtain additional stormwater approvals, such as obtaining coverage under the General Permit for Stormwater Discharges Associated with Industrial Activities, depending on the type of operations that occur.

The purpose of this Plan is to describe the steps the developer will need to take during the remedial construction and Site redevelopment phases to ensure appropriate stormwater management controls are implemented.

2.0 SITE DEVELOPMENT STORMWATER REQUIREMENTS

In accordance with Article 7 Subtitle 22-1 of the Baltimore City Code, land within Baltimore City (the City) may not be developed unless the developer establishes stormwater management measures that control or manage runoff from the development and incorporates those measures into phases of stormwater management plans approved by the City. Stormwater management is required for all construction, grading, or development that disturbs greater than 5,000 square feet (ft^2) of land. As the asphalt cap or other type of cover will be constructed over the six-acre (approximately 260,000 ft^2) Site, stormwater management controls are required to be implemented during and post construction.

Further, in accordance with Article 7 Subtitle 31-9, Erosion and Sediment Control (ESC) Plans are required for all clearing or grading activities that disturb at least 5,000 ft^2 of land area and at least 100 cubic yards (yd^3) of land volume. Thus, ESC Plans for the proposed project will be required as the redevelopment area exceeds 5,000 ft^2 and 100 yd^3. The ESC Plans will be developed in accordance with the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control and the City's Erosion and Sediment Control Manual.

The developer will implement environmental Site design (ESD) techniques to the maximum extent possible to manage stormwater during the Site redevelopment. In addition, the stormwater best management practices (BMPs) will be designed

to incorporate the appropriate recharge volume, water quality volume, and channel protection storage volume criteria in accordance with the Maryland Stormwater Design Manual (State Design Manual). Furthermore, stormwater controls will be designed to convey runoff from a 24-hour, 10-year frequency storm. Sections 2.1 and 2.2 below describe the Site area that requires stormwater management and the stormwater management submissions the City requires during the Site redevelopment and design phases.

2.1 STORMWATER MANAGEMENT TREATMENT AREA

The Baltimore City Department of Public Works (DPW) recognizes that the stormwater control practices specified in the State Design Manual may not be implementable in urban areas due to existing impervious area and limited open space availability. As such, the City specifies Ultra Urban BMP Design Criteria that will be implemented as needed.

In addition, both the State Design Manual and the City recognize that redevelopment does not allow the same opportunities for stormwater management as new development. The development of the impervious cap may either qualify as Quasi New/Redevelopment or New Development. The development will not be considered solely redevelopment as the project will cause a net increase in impervious area. As is, the six-acre Site qualifies as New Development as the existing impervious area covers less than 40 percent of the Site and the final use will have more impervious area compared to the current Site layout. If the project is considered New Development, the developer will provide full stormwater treatment for the six-acre Site in accordance with the State Design Manual.

A project qualifies as Quasi New/Redevelopment if the existing Site is greater than 40 percent impervious and the project will cause a net increase in impervious area. The developer may be able to consider the development of the six-acre Site as Quasi New/Redevelopment if the redevelopment is grouped into a larger stormwater redevelopment project over the entire North Parcel that is currently greater than 40 percent impervious. If the project qualifies as Quasi New/Redevelopment, stormwater management for 50 percent of the current impervious area will be required, such as the parking areas and roadways near the former building 91 foundation. All other current pervious areas will be treated as new development and full stormwater treatment will be required for those areas.

2.2 *STORMWATER MANAGEMENT PLAN SUBMISSIONS*

The developer will develop stormwater management measures that meet the requirements of the State Design Manual and the City's Design Guidelines. During the Site development and design phase of the redevelopment, the stormwater BMPs will be designed and submitted to the City in three phases, similar to 30, 60, and 90 percent design phases, as specified in the Baltimore City Code. The developer will submit a Stormwater Concept Plan, Site Development Plan, and a final Stormwater Management Plan. The developer will also include ESC Plans or other ESC-related information, as required, with the three stormwater management plan submissions.

Examples of BMPs that could be used to manage stormwater include bioretention filters and sand filters. Installation of the BMPs will require excavation of soil, which will trigger the July 2010 Soil Management Plan requirements for soil stockpiling, characterization and disposition. BMPs could be installed on the six acre northern parcel either under the asphalt or other cover, or in the area adjacent to the Dana property boundary. Alternatively, the BMPs could also be placed on the 17-acre southern portion of the North Parcel. The BMPs would be sized to filter the first inch of rainfall. Rainfall amounts greater than the initial inch can be discharged to an adjacent surface water body via an underdrain system. Preliminary calculations indicate that a BMP consisting of a sedimentation basin combined with a sand filter, measuring approximately 50 feet wide x 450 feet long x 3.5 to 4.5 feet deep (22,500 square feet), could be necessary to treat the first inch of rainfall from a five-acre asphalt area. The developer will need to select BMPs to meet the stormwater treatment goals and fit within the size constraints of the northern portion of the North Parcel.

The developer will first prepare a Stormwater Management Concept Plan to provide the DPW an opportunity to review the proposed plan to manage stormwater once construction of the impervious cover is complete. The Concept Plan submission will allow the DPW to review and provide comments regarding the proposed stormwater management before the final design is completed. The developer will prepare a Concept Plan and submit it along with the Concept Phase Submittal Checklist and Concept Phase Design Plan Checklist to the DPW. The Concept Plan will include the following:

- Project location and description;
- Name and address;
- Type of development/Overview of project/Land use;
- Approximate Maryland State Plane coordinates;
- Site location maps the depicts existing natural features, topography, and natural drainage patterns;

- Drainage area and watershed;
- 100-year Floodplain location, if applicable;
- Anticipated locations of Site improvements;
- Location of proposed limit of disturbance, erodible soils, steep slopes, and areas to be protected during construction;
- Proposed stormwater management controls and unified sizing criteria volume computations; and
- A narrative that supports the proposed stormwater management controls and that describes how ESD will be implemented to the maximum extent practicable.

The developer will also include preliminary erosion and sediment control information with the Concept Plan submission. This submission will provide sufficient information for an initial assessment of the proposed project and whether erosion and sediment control can be provided in accordance with the Baltimore City Code. The Concept Plan will include all erosion and sediment control information specified in Article 7 Subtitle 32-5 of the Baltimore City Code including, but not limited to a Site map, a general description of the predominant soil types on the Site, and the anticipated location of Site improvements.

After the City DPW reviews and approves the Concept Plan, the developer will prepare a Site Development Plan that incorporates the comments received to the Concept Plan and will build upon the information submitted in the Concept Plan. The developer will also include the Site Development Plan Submittal Checklist and the Site Development Plan Design Plan Checklist with the submittal. The Site Development Plan will include the following information in addition to the information submitted in the Concept Plan:

- Final Site layout;
- Exact impervious area locations and acreages;
- Proposed topography;
- Delineated drainage areas at all points of discharge from the Site;
- Stormwater volume computations for ESD practices and quality control structures; and
- A narrative that describes how ESD will be used to meet minimum control requirements and justifies any proposed structural control practices.

The developer will also submit a proposed ESC Plan as a part of the Site Development Plan submission. The ESC Plan will include all information specified in Article 7, Subtitle 32-6 of the Baltimore City Code including, but not limited to existing and proposed topography and improvements, the limit of

disturbance, storm drain features, any phasing necessary to limit earth disturbances and impacts, and an overlay plan that shows the types and locations of stormwater practices and erosion and sediment control practices to be use. The ESC Design Plan Checklist will also be included in the submittal.

Following the Site Development Plan approval, the developer will prepare a final Stormwater Management Plan that meets the design requirements of the Baltimore City Code and the State Design Manual. This Stormwater Management Plan will build upon the information submitted in the Concept Plan and Site Development Plan. The Stormwater Management Plan will include the specified information to allow the City DPW to evaluate the environmental characteristics of the development area, the potential impacts of the proposed development on water resources, and the effectiveness of measures proposed for managing stormwater runoff from the Site. At a minimum, the following will be included with the Stormwater Management Plan report:

- A brief narrative description of the project;
- Geotechnical investigations including soil maps, borings, site-specific recommendations, and any additional information necessary for the proposed stormwater management design;
- Descriptions of all water courses, impoundments, and wetlands on or adjacent to the Site or into which stormwater directly flows;
- Hydrologic computations, including drainage area maps (scale of 1"=200') depicting pre development and post development runoff flow path segmentation and land use;
- Unified stormwater sizing criteria volume computations and summary tables according to the State Design Manual;
- Structural computations;
- Copies of all permits required by the project; and
- Construction cost estimate.

The stormwater management plan will also include all certifications as specified by the City including a certification by the owner/developer that all stormwater management construction will be done according to the Stormwater Management Plan, an as-built certification signature block to be executed after project completion, an engineer's certification that the Stormwater Management Plan meets the standards set by the City DPW, and a maintenance and liability certification.

A final ESC Plan will be included in the Stormwater Management Plan package. In accordance with Article 7, Subtitle 32-7 of the Baltimore City Code, the final ESC Plan will include, but will not be limited to the following: ESC practices to minimize on-site erosion and prevent off-site sedimentation, construction

information that describes the relationship between implementation of controls including permanent and temporary stabilization, construction and stabilization of perimeter controls, Site grading, Site construction, final grading, and installation of stormwater management measures.

The ESC Plan will also include all required certifications including that any clearing, grading, construction, or development will be done pursuant to the approved ESC Plan, the responsible personnel involved in the construction project will have a Certificate of Training from a Maryland Department of the Environment (MDE) approved training program for the control of erosion and sediment, and City and State agencies will be allowed right of entry for periodic Site evaluation. The ESC Plan will also contain an engineer's certification that the ESC Plan meets the standards set by the City DPW

3.0 CONSTRUCTION STORMWATER REQUIREMENTS

Both the City and the State have additional stormwater management requirements during the construction phase of development or redevelopment projects as described below.

3.1 CITY CONSTRUCTION STORMWATER REQUIREMENTS

The developer will obtain any required building or grading permits to begin construction following the approval of or in conjunction with the approval of the final Stormwater Management Plan. The developer will schedule a preconstruction meeting with the City to review the construction plans and inspection procedures. The procedures and control measures specified in the Stormwater Management Plan and ESC Plan will be followed to ensure there is no on-site or off-site erosion or runoff during construction activities. The developer will notify the City at the following points of construction: before the start of earth disturbance, after the installation of perimeter erosion and sediment controls is complete, but before proceeding with any other earth disturbance or grading, before the start of another phase of construction or the opening of another grading unit, and before the removal of sediment control practices. The developer will also ensure the City's Environmental Engineering Inspections Section has the opportunity to conduct all required inspections during construction.

3.2 STATE CONSTUCTION STORMWATER REQUIREMENTS

The developer will obtain a permit to authorize the discharge of stormwater associated with construction activity in accordance with 40 Code of Federal

Regulations (CFR) 112.26 and Code of Maryland Regulations (COMAR) 26.08.04.09A. MDE may authorize these discharges through a General or Individual Permit for Stormwater Associated with Construction Activity for all construction activities that disturb greater than one acre of land. The developer will obtain any required discharge permit prior to start of construction or land disturbance.

The developer will submit a Notice of Intent (NOI) to obtain coverage under the General Permit for Stormwater Associated with Industrial Activity (General Permit) using MDE's online e-Permits system. The developer will also submit a certification that the final Stormwater Management Plan and ESC Plan have been approved by the Baltimore City DPW. Once MDE has verified that all required information has been submitted, a 14-day public participation period begins. If no comments are received during the 14-day period, MDE will notify the applicant that coverage under the General Permit has been granted.

If a comment is submitted during the participation process requesting the applicant to obtain an Individual Permit for Stormwater Associated with Construction Activity (Individual Permit), MDE may require the applicant to obtain an Individual Permit. The General Permit only authorizes the discharge of uncontaminated stormwater that is generated during construction activity. Due to the potential for stormwater to come into contact with disturbed areas of known contamination during the construction of the cap, the developer may be required to obtain an Individual Permit. The developer will work with MDE to obtain an Individual Permit prior to the commencement of construction if it is determined that the stormwater discharges during construction activities cannot be authorized under a General Permit.

FMC Corporation

Appendix G

Construction Quality Assurance Plan

Former Agricultural Products Group Facility
Baltimore, Maryland

19 October 2016

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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LIST OF ACRONYMS

CMI	Corrective Measures Implementation
CQA	Construction Quality Assurance
ERM	Environmental Resources Management, Inc.
FMC	FMC Corporation
HASP	Health and Safety Plan
NAPL	Non-aqueous Phase Liquid
SMP	Soil Management Plan
USEPA	U.S. Environmental Protection Agency
Work Plan	CMI Work Plan

1.0 *CONSTRUCTION QUALITY ASSURANCE OBJECTIVES*

FMC Corporation (FMC) has prepared this Construction Quality Assurance (CQA) Plan for the Corrective Measures Implementation (CMI) at the North Parcel located at 1600 East Patapsco Avenue (Site or Facility). The North Parcel is the 23-acre portion of the 90-acre property north of the 67-acre former Main Plant (1701 East Patapsco Avenue). The CMI construction activities are described in detail in the CMI Work Plan (Work Plan), and consist of: 1) source area excavation and off-site disposal; 2) capping the six acre northern parcel using asphalt or some other type of cover; and 3) potentially installation of vapor barriers in the event a building is installed on the Site. The CQA Plan is considered a 90 percent sign submittal and will be finalized after the developer completes the design for the implementation of the corrective measures.

The construction quality assurance objectives for each aspect of the construction are provided below.

Source Area Excavation

- Removal of the non-aqueous phase liquid (NAPL)-impacted soils from the source area (approximately 200 cubic yards or about 300 tons) down to the gray clay confining unit;
- Removal of any subsurface piping and structures from the excavation area;
- Screening of excavation area to determine the absence or presence of NAPL;
- Disposal of NAPL-impacted soils off-site; and
- Backfilling of excavation area with soils from the 17-acre portion of the North Parcel or imported fill material.

Capping

- Placement of an engineered asphalt cap or other cover (i.e., asphalt, buildings, landscaped areas) over five of the six acres of the northern portion of the North Parcel.

Soil Vapor Barriers

- Construct a vapor barrier beneath a boiling in the event a building is constructed over the five acre portion of the North Parcel. The vapor barrier will include of a synthetic vapor barrier, permeable gravel conveyance layer and vents to capture and convey accumulated vapors to the atmosphere.

The construction activities will be conducted by the developer, and the construction contractor will be retained by the developer. To confirm that the

construction quality assurance objectives and design basis are met, FMC will retain a contractor to serve as the CQA officer for the construction work. The CQA officer present during implementation of the construction activities will have sufficient practical, technical, and managerial experience to successfully implement CQA activities. The CQA officer will be responsible for the implementation of this CQA Plan, and will maintain daily records of observations and activities.

2.0 INSPECTION AND MONITORING

A pre-construction meeting will be held at the Site prior to the start of work. The meeting will be held among FMC, Environmental Resources Management, Inc. (ERM), and the construction contractor, as applicable. The objectives of the meeting will be to review roles and responsibilities, the construction plans and specifications, the CQA Plan, and other potential issues associated with the Work Plan implementation. During the meeting, a Site walk will also be conducted.

The CQA officer is responsible for monitoring the contractor's adherence with the technical specifications. During implementation of the Work Plan, the CQA officer will, at a minimum:

- Review the results of the contractor's subsurface clearance efforts, including the results of the private utility location;
- Review the layout of the proposed excavation with the contractor for compliance with the technical specifications prior to initiation of excavation activities;
- Review material submittals and shop drawings required by the technical specifications;
- Inspect the contractor's installation of erosion and sediment control measures;
- Observe and document the excavation activities for the duration of the work;
- Estimate the volume of soil removed from the excavation;
- Verify that the excavated material is stockpiled, sampled and analyzed in accordance with the Soil Management Plan (SMP) (ERM, 2010);
- Observe and document the on-site treatment or off-site transportation of the NAPL-impacted soils;
- Verify that the imported fill soil was obtained from the off-site source determined to be acceptable during sampling conducted for the Site and soil quality meets or exceeds the current United States Environmental Protection Agency (USEPA) regional screening levels for residential soils with appropriate allowances for background concentrations of metals;

- Review the results of the geotechnical parameters measured by the contractor for the imported fill in accordance with Technical Specification 02200 Earthwork to confirm that the soil is of acceptable quality for placement as backfill;
- Oversee the option for placement of soils into the excavated area once treatment of NAPL-impacted soils is confirmed to be complete;
- Estimate the volume of soil placed as backfill;
- Oversee the placement, grading and compaction of the clean fill material on-site;
- Review the layout of the proposed engineered cover with the contractor for compliance with the technical specifications prior to initiation of installation activities;
- Observe and document the placement of the engineered cover;
- Verify that Site restoration was conducted in accordance with the technical specification; and
- Prior to Contractor demobilization from the Site, conduct a pre-final inspection to determine final compliance with the specifications.

The CQA officer will inspect the work Site to confirm the contractor maintains the excavation, stockpiles, access roads, off-site roadways and Site free from excess dust to such a reasonable degree as to avoid causing a hazard or nuisance. In addition, the CQA officer will conduct particulate monitoring to monitor the level of particulates released to the air during the excavation, loading, and earthmoving activities, and recommend measures for dust control if the particulate monitoring indicates it is necessary.

3.0 SAMPLING

The CQA officer will oversee the collection of samples to:

- Verify the source area has been removed to the design specification and that a sample of the imported fill material is collected and analyzed;
- Maintain adherence with the requirements in the SMP (ERM, 2010); and
- Verify adherence of the imported soil fill quality with USEPA residential soil regional screening levels.

4.0 HEALTH AND SAFETY

The CQA officer will conduct its oversight and sampling activities in accordance with a comprehensive, project-specific health and safety plan (HASP). Field

work will be conducted in accordance with the HASP in a manner to minimize the probability of a near miss, equipment and property damage, and personal injury. Prior to initiating Site work, each field team member will review the HASP and sign the HASP Certification. Field activities will be implemented in USEPA Level D protection in accordance with FMC's site-specific requirements (i.e., hard hat, safety glasses, steel-toed boots, gloves, long sleeves, high visibility vest or clothing).

5.0 DOCUMENTATION

The results of the inspections and observations will be documented and compiled by the CQA officer. Daily documentation will be maintained in a waterproof, bound field logbook and will service as a formalized quality assurance record regarding health and safety, field activities, and communications. Additions or correctives to the field logbook will be single-lined out, dated, and initialed. At a minimum, the daily records will include, as applicable:

- Date and project name;
- Weather conditions;
- Locations of work;
- Equipment and personnel used;
- Description of areas of work observed;
- Volume and source of off-site materials received;
- Decisions made or corrective measures implemented; and
- Record of project photographs.

The construction activities will be documented in the CMI report. At a minimum, the report will contain:

- A general summary of the work to include contractors, construction activities, observations, problems and corrective actions, and modifications to the Work Plan and specifications;
- Compiled daily field logbooks;
- Inspection reports;
- Waste manifests;
- Test results and certifications of materials used in the construction; and
- Project photographs documenting work completion.

REFERENCES

Environmental Resources Management (ERM). 2010. Soil Management Plan. Former Agricultural Products Group Facility, Baltimore, Maryland. Prepared for FMC Corporation, dated 21 July 2010.

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted Electronically

May 15, 2019

Mr. John Hopkins
Land and Chemicals Division (3LC20)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Corrective Measures Implementation Report for Ground Water Recovery Optimization
Permit for Corrective Action, EPA ID No. MDD0030781875
FMC Corporation, Former Agricultural Products Group Facility
1701 East Patapsco Avenue, Baltimore, Maryland 21226

Dear Mr. Hopkins:

Please find attached the *Corrective Measures Implementation Report for Ground Water Recovery Optimization* (CMI Report) for the above-referenced site. The CMI Report was prepared in accordance with Part II.B.1 of the Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) signed by the U.S. Environmental Protection Agency on January 30, 2013. The USEPA's Final Decision and Response to Comments Document (FDRTC) and Permit identified a step-wise process needed to convert the existing ground water recovery system from an interim to a final remedy. In accordance with Part II.B.1.g of the Permit, the last step in the process was the implementation of the CMI Work Plan (Work Plan) upon receipt of approval from USEPA. USEPA approved the Work Plan in a letter to FMC dated 2 March 2017 (USEPA, 2017) and FMC implemented the system optimization measures shortly thereafter.

In accordance with the Work Plan, this CMI Report presents the results of the hydrocarbon and exploratory boring investigations and describes the final configuration and operating parameters for the optimized ground water recovery system.

If you have any questions regarding the CMI Report, please do not hesitate to contact me at (215) 299-6358.

Sincerely,

Jonathan Bucca
Remediation Project Manager

Attachment - CMI Report (electronic copy via secure file transfer link)

cc: B. Coblentz, Maryland Department of Environment
B. McGinnis, FMC
R. Keating, ERM
R. Banary, Parsons

CMI REPORT

FMC Corporation

Corrective Measures Implementation Report for Ground Water Recovery Optimization

Former Agricultural Products Group Facility
Baltimore, Maryland

May 2019

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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LIST OF ACRONYMS

bgs	Below ground surface
CMI	Corrective Measures Implementation
CMP	Corrective Measures Plan
CMS	Corrective Measures Study
COMAR	Code of Maryland Regulations
CPT	Cone Penetrometer Test
CQA	Construction Quality Assurance (CQA)
DRO	Diesel Range Organics
ERM	Environmental Resources Management
FDRTC	Final Decision and Response to Comments
FMC	FMC Corporation
gpm	Gallon per minute
GWMP	Ground Water Monitoring Plan
GWTP	Ground Water Treatment Plant
HASP	Health and Safety Plan
LIF	Laser Induced Fluorescence
msl	Mean Sea Level
MCL	Maximum Contaminant Level
MDE	Maryland Department of Environmental
µg/L	Micrograms per liter
OIP	Oil Interface Probe
ORO	Oil Range Organics
OSHA	Occupational Safety and Health Administration
PVC	Polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RBC	Risk-based Concentration
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SCADA	Supervisory Control and Data Acquisition
SMP	Soil Management Plan
SVOC	Semi Volatile Organic Compound
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbon
USEPA	United States Environmental Protection Agency
VFD	Variable Frequency Drive
VOC	Volatile Organic Compound

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Corrective Measures Implementation (CMI) Report for Ground Water Recovery Optimization for submittal to the United States Environmental Protection Agency (USEPA) with respect to the FMC facility at 1701 East Patapsco Avenue, Baltimore, Maryland (Main Plant or Site, see Figure 1). The Ground Water Optimization Corrective Measures Study (CMS) Report (ERM, 2016), submitted to USEPA on 7 September 2016 and approved by USEPA in a letter dated 3 October 2016 (USEPA, 2016), recommended changes to the ground water recovery and treatment system at the Main Plant to improve control of facility-related ground water contamination from potentially entering Site-adjacent water bodies and to increase removal of contaminant mass.

The corrective measures described herein were implemented in accordance with:

- USEPA's Region III Final Decision and Response to Comments (FDRTC) issued on 14 April 2011 (USEPA, 2011);
- Section II.B.1 of USEPA's Resource Conservation and Recovery Act (RCRA) Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) issued on 30 January 2013 (USEPA, 2013); and,
- CMI Work Plan for Ground Water Recovery Optimization (ERM, 2017), which was approved by USEPA on 2 March 2017 (USEPA, 2017).

Optimization of the recovery system is the final step of the corrective action process being conducted at the Site under RCRA Corrective Action Permit No. MDD003071875, issued by the USEPA in 1989. The FDRTC and Permit identify a step-wise process needed to convert the existing ground water recovery system from an interim to a final remedy. In accordance with Part II.B.1.g of the Permit, the last step in the process was the implementation of the CMI Work Plan in accordance with the schedule contained therein upon receipt of approval from USEPA. The USEPA approved the CMI Work Plan in a letter to FMC dated 2 March 2017 (USEPA, 2017).

The purpose of this CMI Report is to present the results of the hydrocarbon and exploratory boring investigations and to describe the final configuration and operating parameters for the optimized ground water recovery system. USEPA approval of this CMI Report will be the final step to complete the corrective action process and convert the ground water recovery system from an interim remedy to a final remedy.

1.1 *DESIGN BASIS*

The corrective measure recommended in the CMS report and accepted by USEPA consisted of optimization of the ground water recovery by reconfiguration of the extraction well system, through the installation of new shallow and intermediate recovery wells in areas where contamination is located coupled with shutting down recovery wells in areas where contamination is no longer present. The ground water recovery optimization approach was presented in Alternative 2 of the CMS (ERM, 2016). The optimization approach was refined during the preparation of the CMI Work Plan for Ground Water Recovery Optimization (ERM, 2017). The 50 percent design for the reconfiguration of the recovery well system was presented in Section 2.3 of the CMI Work Plan, and included the following elements:

- Stonehouse Cove Recovery Wells (wells RW-2090A through H and J through M):
  - Deepen wells RW-2090C, D, E, F and G with well screens from the current depths of 16 to 31 feet to depths up to 35 feet depending on the results of the field study (new wells designated with an "R");
  - Keep wells RW-2090H, J and L operating; and
  - Shut down wells RW-2090A, B, K, and M due to absence of contamination in the areas upgradient of these wells.
- Curtis Bay Recovery Wells (wells RW-2091A through F):
  - Replace well RW-2091A with one well closer to Curtis Bay, and take current well RW-2091A off-line (new well designated as 2091AR);
  - Install new well RW-2091B1 between 2091B and C;
  - Install new well RW-2091E1 between 2091E and F; and,
  - Keep wells RW-2091B, C, D, E and F operating.
- Changes to the intermediate recovery system (wells RW-2092A through E and 2092F) are as follows:
  - Install one new intermediate depth well between well 2092C and D;
  - Take well 2092E off-line (but not be abandoned); and,
  - Keep wells 2092A, B, C, D and F operating.

During the CMI, the design basis was adjusted to reflect new information obtained during the hydrocarbon and exploratory boring investigations. This CMI Report presents the final configuration of the recovery well system, including the system-wide operating parameters (i.e., pumping rates for individual wells and identification of wells to be pumped and wells to be shut down) for the reconfigured system based on the results of system testing. The

implementation of the CMI remedial measures was completed consistent with objectives presented in the CMI Work Plan.

1.2 REPORT PURPOSE

The purpose of the CMI portion of the RCRA corrective action process is to design, construct, operate and maintain the selected corrective measure alternative. In accordance with Section 4.4 of the CMI Work Plan, the purpose of this CMI Report is three-fold:

1. Provide a description of the investigations performed during the CMI, including a summary of the data collected during the hydrocarbon and exploratory boring investigations;
2. Provide a description of the testing and system reconfiguration work performed during the CMI, including as-built plans for new recovery wells and a description of system-wide reconfiguration based on the results of recovery testing; and,
3. Document the modifications to the CMI Work Plan, which were made during the implementation of the CMI Work Plan.

1.3 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- **Section 2 – CMI Investigations**. This section describes the results of the investigations, including the hydrocarbon investigation at recovery well RW-2090E, exploratory boring and monitoring well installation, sampling, and analysis, and recovery well installation and individual well testing.
- **Section 3 – Site-Wide Recovery System Evaluation**. This section describes the Site-wide recovery system setup and testing and key findings of the evaluation.
- **Section 4 –Final System Configuration.** This describes the final reconfiguration of the Site-wide recovery system, including the system-wide operating parameters based on the results of system testing, including identification of wells to be used for recovery and wells to be shut down and the target pumping rates for each recovery well.

2.0 CMI INVESTIGATIONS

The implementation of corrective measures was conducted in accordance with a four-step approach, with each successive step based on the field investigation data collected during the previous step. The following sections describe the investigation steps and the data collected. All work was performed in accordance with the CMI Work Plan (ERM, 2017) unless otherwise noted.

The results of the hydrocarbon investigation and the exploratory boring investigation, described in Sections 2.1 and 2.2 below, were used to develop the final approach for the installation of the new and replacement recovery wells. The results of the investigations and proposed changes to the installation of new and replacement recovery wells were presented to USEPA by FMC in an email dated 14 July 2017.

2.1 HYDROCARBON INVESTIGATION

2.1.1 Investigation Procedures

The hydrocarbon investigation was implemented in accordance with the tasks included in CMI Work Plan Appendix B – Sampling and Analysis Plan to Evaluate Hydrocarbon at well RW-2090E. An evaluation of the extent of hydrocarbon material in the shallow aquifer and was conducted on 4 April and 5 April 2017 using in-situ laser induced fluorescence (LIF) screening of subsurface soils. A full report of the hydrocarbon evaluation is presented in Appendix A. LIF locations were advanced within the Hydrocarbon Investigation Area (identified on Figure 2) to depths ranging from 18 to 35 feet below ground surface (bgs). Three of the LIF locations were installed along the eastern portion of the railroad tracks, east of recovery well RW-2090E (Figure 3). The originally proposed number of LIF borings was between five and ten; however, the number of LIF borings increased as further delineation of the lateral and vertical extent of hydrocarbons in the subsurface became necessary. A total of 23 borings were completed.

Cone penetrometer testing (CPT) was employed to evaluate soil permeability and assess hydrocarbon mobility on 6 April 2017. Five boring locations were completed at depths ranging from 25 to 36 feet bgs. Results of the CPT monitoring can also be found in Appendix A. In general, clay to silty clay material was observed at each of the test locations extending from about 10 to 25 feet bgs, which is consistent with prior observations of the gray clay in nearby borings.

Soil boring installation, soil sampling, and temporary piezometer installation was completed within the Hydrocarbon Investigation Area between 7 April and 18 April 2017 to verify the presence of hydrocarbon material identified using LIF and to assess the mobility of the hydrocarbon material for potential migration to the new ground water recovery well. Eight soil boring locations were installed within the Hydrocarbon Investigation Area: TP-1, TP-2a, TP-2b, TP-3a, TP-3b, TP-4, TP-5, and L22. Seven of those boring locations were converted to temporary piezometers to assess the mobility of hydrocarbon material. The eighth location, L22 was abandoned with soil and bentonite backfill. The piezometers were installed at depths ranging from about 16 to about 35 feet bgs with screened interval lengths of 10 feet for all piezometers (Table 1). Piezometer construction details and boring longs can be found in Appendix B.

One additional soil boring was installed to the east of recovery well RW-2090E, east of the railroad tracks. This boring, L22, was installed in response to low-level LIF readings in the area (suspected to be background readings). Two soil samples were collected from this boring and submitted to the laboratory for analysis of Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) and Oil Range Organics (ORO). Field observations of the ground water levels within temporary piezometers in the Hydrocarbon Investigation Area were performed on 25 April 2017, 4 May 2017 and 11 May 2017.

2.1.2 *Investigation Results*

The detailed findings of the hydrocarbon investigation are described in the report in Appendix A. The LIF results, combined with visual observations of the soil cores and the TPH sampling, effectively delineated the lateral and vertical extent of hydrocarbon impact.

- The hydrocarbon contamination is located in the upper 16 feet of the fill material, and appears to be concentrated at the interface between the fill and gray silty clay unit. The depth to water in the study area was between 4 to 6 feet, and in some locations hydrocarbon material was identified being trapped in the soft gray silty clay that is above the stiff red clay (Figure 4).

- Laterally the area of impacts extends between borings L17 and L08 (Figure 4). Hydrocarbon impacts were also found in boring L22 in the form of TPH contamination, indicating that the area east of the railroad tracks contains hydrocarbon impact.

- Water levels were gauged at wells MW-07, MW-08, MW-37, MW-41, and MW-42 (see Figure 2) along with nearby manholes MW #103, MH #104, and MH #105 to assess possible preferential pathways for shallow water movement, on 3 April 2017. Water levels were consistent with those previously measured at the Site and ranged from 3.68 feet at location MW-42

to 11.07 feet (elevation relative to mean sea level, msl) at location MW-7. Water levels measured in the manholes ranged from 3.25 feet at location MH #103 to 7.80 feet msl at location MH #105 indicating the water in the manholes and sewers are at a higher elevation than ground water and the sewer system is not likely scavenging ground water or a preferential pathway for ground water migration during average water table elevations. hydrocarbon material was not detected in any of the monitoring wells nor manholes with the OIP or a bailer.

- Monitoring of ground water levels at temporary piezometers located within the Hydrocarbon Investigation Area on 25 April 2017 and 4 May 2017 did not indicate the presence of any measurable hydrocarbon material. However, a sheen and globules of oil were observed in bailers at locations TP-2a, TP-2b, TP-3a, and TP-4. Continued monitoring throughout the optimization study demonstrated no measurable hydrocarbon material in the piezometers suggesting the material is immobile in the subsurface and will not interfere with ground water recovery in the newly installed deeper replacement well.

2.1.3 *Measures to Mitigate the Presence of Hydrocarbon Material in the Recovery System*

Based on the results of the hydrocarbon investigation, the following changes were made to the replacement recovery wells to mitigate the potential for the hydrocarbon in the subsurface to interfere with ground water recovery:

- RW-2090ER was installed approximately 90 feet north of the existing well RW-2090E and RW-2090E1 was installed approximately 70 feet south of the existing well RW-2090E to be outside of the area of hydrocarbon impacts;
- Constructed well screens in the new wells RW-2090ER and RW-2090E1 about 5 feet deeper than the bottom of the existing well RW-2090E screen interval to be below zone of hydrocarbon impacts; and
- Installed an outer protective casing at the new well RW-2090E1 to 20 feet below grade to prevent the potential carry down of hydrocarbon material during the installation and subsequent ground water extraction.

The installation and results of the exploratory boring 2090ER are described in Section 2.2 Exploratory Boring Investigation. Installation of the recovery wells RW-2090ER and RW-2090E1 are described in Section 2.4 Recovery Well Installations.

2.2 *EXPLORATORY BORING INVESTIGATION*

2.2.1 *Investigation Procedures*

During 4 April to 17 April 2017 FMC installed nine soil borings to provide stratigraphic and ground water quality data to select the screen intervals for the new recovery wells. Six borings were installed near Stonehouse Cove while three borings were installed nearer to Curtis Bay. The boring and piezometer locations are displayed on Figure 2. Borings 2090CR, 2090DR, 2090ER, 2090FR, 2090GR, 2090LR, 2091E1, 2091A1, and 2091B1 were drilled and completed with temporary piezometers to obtain water level and water quality information as described in the Well Installation and Testing Plan of the CMI Work Plan (ERM, 2017). The piezometers were installed at depths ranging from about 33 to 42 feet bgs (Table 1). The location and elevation of the temporary piezometers were surveyed by a Maryland-licensed land surveyor.

Sampling of ground water from the exploratory boring temporary piezometers occurred on 25 April 2017. Ground water quality samples were submitted to Phase Separation Science, Inc., a Maryland-certified laboratory, in Baltimore for analysis of VOCs. Results of the ground water sampling were used to determine the appropriate location and depth of installation of the new recovery and monitoring wells on the Site.

After completion of the study, the temporary piezometers were removed, and the boreholes grouted in accordance with Code of Maryland Regulations (COMAR) 26.04.04.34 through 36, as applicable.

2.2.2 *Investigation Results*

The drilling of exploratory borings confirmed a hard, red, dry, clay is present at approximately 31 feet bgs. Figures 5A, 5B and 5C illustrate the geology is consistent around the perimeter of the Site. The fill and silty sand units are underlain by a gray silty clay, which is also ubiquitous around the perimeter of the Site. Along Stonehouse Cove, the underlying red clay pinches out around 2090G and 2090D (just before 2090D, at new exploratory boring for 2090ER) (Figure 5A). On the Curtis Bay side of the Site three locations were installed targeting the interface between the Pleistocene and Patapsco aquifers which appears to be separated by the gray silty sand sitting on top of a compact, golden-brown sand.

Stained soils and measurements of possible VOCs using a photoionization detection (PID) were observed at location 2091E1 near the Stormwater Retention Basin. Piezometer 2091B1 was installed to approximately 41 feet bgs while trying to locate the interface between the Patapsco and Pleistocene. Soil conditions at the bottom of this piezometer appear to be less permeable, though still in the gray clay (Figure 5C). Ground water quality samples were collected from the nine temporary piezometers in the shallow aquifer to confirm the presence of

VOCs at each location. Results of the sampling event are summarized in Table 2; laboratory reports are provided in Appendix C.

- Chlorobenzene was detected at each of the piezometers with the exception of 2090GR, and where detected its presence is directly proportional to the magnitude of the overall VOC plume (see Table 2). The concentration of chlorobenzene was the highest, at 12,000 µg/L, at piezometer 2090FR in the Stonehouse Cove portion of the Site. This is consistent with the understanding of the locations of chlorobenzene plumes on the Site and with past data.
- The low levels of VOCs observed in samples from piezometers at 2090CR, 2090GR, 2090LR, and 2091B1 were the determining factor in not installing new recovery wells in these locations.

2.3 *MONITORING WELL INSTALLATIONS*

2.3.1 *Well Installation & Construction*

In accordance with Section 2.0 of the CMI Work Plan Appendix C Ground Water Monitoring Plan for the Main Plant, six new monitoring wells were installed from 27 July 2017 through 28 August 2017. The purpose of the new monitoring wells was to support the Site-wide ground water monitoring program and assess the long-term performance of the reconfigured recovery system. The six new monitoring wells labeled MW-63, MW-64, MW-64A, MW-65, MW-66 and MW-67A were constructed using a 2-inch diameter schedule 40 polyvinyl chloride (PVC) riser and well screen with a 0.01-inch slot size. At each well a filter pack was installed to two feet over the top of the screen and two feet of a bentonite slurry was installed on top of that. Cement grout was used to fill the remaining borehole from the top of the bentonite seal to the surface well pad.

The top of casing elevation and location of the new wells was surveyed by a Maryland-licensed land surveyor. Detailed well specifications are presented in Appendix D. The new monitoring well locations are displayed on Figure 2.

The new wells were subsequently developed to remove fine-grained sediments which may have settled around the well screen during installation, as well as to restore the hydraulic connection between the well and the surrounding formation.

2.3.2 *Ground Water Quality Sampling and Results*

A water quality sample was collected from well MW-64A (installed to 60 feet bgs) to verify the presence and concentrations of VOCs in the intermediate aquifer at the target depth of the proposed recovery well RW-2092G. The results of the laboratory

analysis for VOCs are summarized in Table 2 with laboratory reports included in Appendix C.

The total concentration of VOCs at monitoring well MW-64A was 17,507 µg/L, including chlorobenzene at 14,000 µg/L. Benzene and 1,4-dichlorobeneze were also present at 1,100 µg/L and 1,600 µg/L; all other VOCs were reported less than 500 µg/L.

Based on these water quality results, the target total depth for the new recovery well RW-2092G was identified as 65 feet, including a 5 foot sump and 10 feet of well screen.

2.4 *RECOVERY WELL INSTALLATIONS*

In accordance with Section 2.3 of the CMI Work Plan, seven new recovery wells were installed from 3 August through 25 August 2017. The purpose of the new recovery wells was to better control contaminant migration and increase removal of contaminant mass. This section describes the actual CMI, including any necessary deviations to the design basis described in the CMI Work Plan (refer to Section 1.1 Design Basis presented herein). The other network optimization changes described in the CMI Work Plan were implemented as previously anticipated.

2.4.1 *Shallow Well Locations*

Figure 2 shows the locations of new shallow recovery wells. The final changes to the shallow recovery system include the following:

- Stonehouse Cove Recovery Wells (wells RW-2090A through H and J through M):
    - Replaced existing wells with deeper wells at RW-2090DR, ER, E1, and FR with well screens deepened to depths of 40 feet (replacement wells designated with an "R");
    - Installed a 10-inch diameter outer casing to 20 feet below grade at well RW-2090E1 to prevent the potential carry down of hydrocarbon material from the water table.
    - Maintaining wells RW-2090C, F, G, H, J and L operating; and
    - Shut down wells RW-2090A, B, D, K, and M due to absence of contamination in the areas upgradient of these wells. Well RW-2090E will remain off-line due to the presence of hydrocarbon material in the well.
- Curtis Bay Recovery Wells (wells RW-2091A through F):

- Installed RW-2091A1 closer to Curtis Bay, and took current well RW-2091A off-line;
- Installed new well RW-2091E1 between RW-2091E and F; and
- Keeping wells RW-2091B, C, D, E and F operating.

The installations described above include the following deviations from the EPA-approved CMI Work Plan:

1. Based on the recent testing at 2090CR well RW-2090C captures much of the contamination at MW-41 (CB=3,920 µg/L in 2016 and 4,000 µg/L in 2015, but only 45.5 µg/L in 2013) and deepening the well will not enhance capture.
2. Testing at 2090ER suggested that installation of two replacement wells, RW-2090E1 (north of the current well location) and RW-2090ER (south of the current well location), with 15 feet of screen completed between approximately 20 and 35 feet bgs can better target recovery from specific areas. Both new wells have a 5 foot sump at the base. Well RW-2090E1 will provide additional ground water capture in the vicinity of the hydrocarbon investigation area.
3. RW-2090FR was installed with a screen interval from approximately 20 to 35 feet bgs, as previously anticipated; however, existing well RW-2090F will continue to operate extracting the shallower ground water.
4. Based on no detection of VOCs at 2090GR, the proposed well RW-2090GR was not installed and a shallow monitoring well, MW-66, was proposed. RW-2090G will continue to operate.
5. A deeper well is not required at RW-2090L based on investigation results, so no change was made to RW-2090L, which will continue to operate.
6. Based on recent testing at 2091B1 (chlorobenzene at 27 µg/L) current wells RW-2091B and RW-2091A are working together to provide sufficient capture and therefore proposed well RW-2091B1 was not installed.

2.4.2 *Intermediate Well Locations*

Figure 2 shows the locations of new intermediate recovery well RW-2092G. Changes to the intermediate recovery system (wells RW-2092A through E and 2092F) from the design basis are as follows:

- Installed one new intermediate depth well, RW-2092G, between wells RW-2092C and D and adjacent to Curtis Bay;
- Well RW-2092E was taken off-line (but not abandoned); and
- Keeping wells RW-2092A, B, C, D and F operating.

There were no deviations from the EPA-approved CMI Work Plan with respect to the installation of the new intermediate recovery well.

2.4.3 *Well Construction*

The shallow recovery wells were installed to an approximate depth of 35 to 40 feet bgs targeting the Pleistocene aquifer. The intermediate well was installed to an approximate depth of 65 feet bgs targeting the Patapsco aquifer. The new wells were installed in 12-inch diameter borings, and consist of six-inch diameter Schedule 40 PVC riser with stainless steel screen and sump. The annulus around the well screen was filled with a sand pack compatible with the identified grain size in the soil boring and the well screen slot size (0.010-inch). At each well two feet of a well screen, bentonite pellets, and a Portland cement grout slurry was installed on top of the sand filter pack up to the surface well pad.

The top of casing elevation and location of the new wells were surveyed by a Maryland-licensed land surveyor. Detailed well specifications are presented in Table 3 and on the construction logs in Appendix E.

The new wells were subsequently developed to remove fine-grained sediments which may have settled around the well screen during installation, as well as to restore the hydraulic connection between the well and the surrounding formation.

Wells taken off-line have been left in place in the event future data indicates that recovery at these locations will be beneficial.

2.5 *SINGLE-WELL PUMPING TESTS*

Step-drawdown, four-hour constant-rate and eight-hour constants rate pumping test were performed in the six new shallow recovery wells (RW-2090DR, ER, E1 and FR, RW-2091A1 and E1) and one intermediate recovery well (RW-2092G) between 5 and 22 September 2017. The tests were performed in accordance with the procedures in Appendix A Well Installation and Testing Plan of the CMI Work Plan for the Ground Water Recovery Optimization, dated 25 January 2017 (ERM, 2017). Well testing was completed between 31 August and 22 September 2017.

2.5.1 *Single Well Pumping Test Procedures*

Prior to conducting the constant-rate pumping test a step-drawdown test was conducted at each well using an adjustable speed electric pump. The tests involved four one-hour intervals of pumping at 1 gallon per minute (gpm), 2 gpm, 4 gpm, and 5 gpm, with the exception of the tests at RW-2091A1 and E1

where the water level drawdown reached the top of the pump before the third and second tests were complete. Once a sustainable yield was estimated after the completion of the four steps, the well was pumped at the estimated rate for the constant rate test for a period of four hours to make sure the selected rate is sustainable.

Separate eight-hour single-well pumping tests were conducted in each new recovery well beginning on 14 September 2017. Water level measurements were collected via hand measurements and pressure transducers in the temporary piezometer installed at the new recovery well location, and surrounding wells to allow for the determination of the radius of influence. Baseline monitoring was conducted for 24 hours in advance of the eight-hour test to evaluate changes in the water table and potential tidal effects.

2.5.2 *Single Well Pumping Test Results*

Table 4 provides a summary of observations from the pumping tests including the duration of each test, pumping rates, observed drawdowns and recommendations for pumping rates. Data for the individual well tests are presented in Appendix F.

Based on the individual well tests the new shallow recovery wells can withdrawal ground water at nominally higher rates than the existing wells with a sustainable rate of about 2 gpm. Well RW-2090DR exhibited rising water levels during the 4 gpm step potentially indicating an influx of water from the Stonehouse Cove. The water level in RW-2092G drew down less than 2 feet during the 5 gpm step-test consistent with the more prolific characteristics of the intermediate aquifer.

During the 4-hour constant-rate pumping tests, shallow recovery wells were pumped at rates between about 0.5 gpm (at RW-2091E1) and 2.9 gpm (at RW-2090E1). The intermediate recovery well was pumped at an average rate of 5.1 gpm. The water level in wells RW-2090ER, RW-2090E1, RW-2090FR and RW-2091E1 were recovering at the start of the test and continued to rise throughout the pumping test.

The pumping rates for the 8-hour constant rate tests were set with consideration of each well's sustainable yield and the overall capacity of the GWTP. The test rates ranged from 0.5 to 2.5 gpm at the shallow recovery wells and was 2.85 gpm at the intermediate recovery well. Sufficient drawdown of the water table, ranging from 1.2 to 3.3 feet, occurred in the majority of the new recovery wells indicating an ability to sustain the proposed withdrawal rates and influence the ground water plume within the aquifers. At well RW-2091E1 the water level drew down approximately 16 feet while pumping at a rate of only 0.5-0.8 gpm. This water comes from several thin, discontinuous lenses of sand and gravel

within the fine-grained alluvial deposits. Consequently, flow into the recovery well is only what the formation can yield in the vicinity of the well.

2.6 *MANAGEMENT OF INVESTIGATION DERIVED WASTE*

Soil cuttings generated during implementation of the CMI Work Plan were placed on plastic sheeting and covered. The soil cuttings were sampled to determine adherence with the standards included in the July 2010 Soil Management Plan (SMP). Laboratory analysis reports are provided in Appendix G. The soil was managed in accordance with the SMP requirements, which includes characterization and comparison to the soil management standards in the SMP. Since the laboratory test results were less than the SMP standards the soil was spread out in the southeast corner of the Site near well RW-2091A1. The soil has been naturally vegetated.

Water generated from decontamination of equipment, well development and testing of new wells was contained and disposed of at the GWTP.

Disposable materials (i.e. nitrile gloves) were containerized and disposed of in the facility dumpster.

3.0 SYSTEM-WIDE RECOVERY SYSTEM EVALUATION

3.1 SYSTEM-WIDE TESTING PROCEDURES

The new recovery wells were plumbed by Parsons to convey recovered ground water to the existing common aboveground header piping system. The connection and final system configuration are described in Section 4.

In accordance with Task 5 – New Recovery Well Start-up in Appendix A of the CMI Work Plan, the existing ground water recovery system was temporarily shut down and each new recovery well was brought online individually in order to adjust the set points, which is the level that the water level in the well would be lowered to during pumping. The withdrawal rates are a function of the pump's pumping capacity and the set points which determine the range of water level in the well when the pump operates. The starting set point was determined based on the data collected during the constant-rate pumping tests (see Table 4).

In accordance with Task 6 – System-wide Recovery Testing in Appendix A of the CMI Work Plan, the existing and new wells were tested to determine the amount of ground water that could be recovered on a sustained basis from the system, and to select optimum withdrawal rates to increase capture and mass removal but not exceed the 34 gpm design capacity of the GWTP. The system-wide testing consisted of individually testing the arrays of wells as follows:

- Stonehouse Cove shallow wells from 30 April to 4 May 2018;
- Curtis Bay shallow wells from 7 to 11 May 2018; and
- Intermediate wells as part of the complete system beginning 14 May 2018.

Prior to the startup of pumping for each array, ground water level measurements were collected from a subset of wells in the area to assess static non-pumping conditions. Ground water measurements and elevations are summarized in Table 5. Continuous ground water measurements collected at the Stonehouse Cove pier and at wells using pressure transducers are provided in Appendix H.

Beginning on Monday, 30 April 2018, a synoptic round of water levels was taken from the Stonehouse Cove array wells following a temporary shutdown of the system. Transducers installed in monitoring wells and piezometers along with the one at the Stonehouse cove pier were checked and confirmed to be recording. The recovery wells in the array were then turned back on using the recommended set points. After four days of operation, a synoptic round of water levels was taken from the array monitoring wells. The transducers at monitoring wells and piezometers were recovered, the data was downloaded, and the transducers were then moved to the monitoring wells located adjacent to the Curtis Bay recovery well array and the process repeated on Monday, 7 May 2018.

With all shallow recovery wells operating the total rate of flow to the GWTP was reported between 8 and 9 gpm.

Following testing of the shallow recovery well system, and while the shallow arrays continued to operate, the intermediate Curtis Bay well array was tested. This test also served as the initial test of the complete Site-wide recovery system. Beginning on Monday, 14 May 2018, a synoptic round of water levels was taken from the intermediate array wells. The recovery wells in the array were then turned back on using the recommended set points. On Friday, 18 May 2018, a synoptic round of water levels was taken from the entire Site to assess cumulative drawdown. The transducers at monitoring wells, piezometers and at the Stonehouse Cove pier were removed and the data downloaded for analysis.

The ground water recovery system continued to operate without any changes for another month and a second synoptic round of water levels was taken from the entire Site to facilitate preparation of a ground water elevation contour map taking into account the new recovery wells. With all shallow and intermediate recovery wells operating the total rate of flow to the GWTP was between 12 and 36 gpm, based on the daily flow rate average reported during June 2018 (Table 6).

After the complete system had been operating for a period of time and equilibrium had been attained, drawdown in the new recovery wells was checked to make sure the combined effect of the system was not adversely affecting the water levels in the new wells due to inter-well interference. Additionally, synoptic water levels were collected on 20 June 2018 from all new and existing monitoring wells on the main plant to determine the extent of capture achieved by the reconfigured system after a full month of operation. Based on the results of the system-wide test, set points in individual recovery wells may be adjusted on a daily or weekly basis to balance the extent of capture and the need to maintain the 34 gpm GWTP throughput limitation.

3.2 *SYSTEM-WIDE TEST RESULTS*

The results of the system-wide recovery system evaluation include:

- The ground water recovery system withdrawals ground water from the Pleistocene and Patapsco aquifer at an average of 35 gpm with spikes up to about 60 gpm (during start-up to fill the influent tanks). The influent flow rate, averaged over the month, during the June 2018 system-wide test was 29 gpm. The system is expected to continue operating at approximately 30 gpm on average.

- Average surface water elevation at the pier is mean sea level plus 1.5 feet (1.5 feet msl) with roughly ± 1.5 feet of tidal change. Similarly, the water levels in

monitoring wells also demonstrated fluctuations consistent with the change in tide. Those wells closest to the shoreline exhibit the greatest influenced change in water level, up to ±0.28 feet for low tide and high tide near the coastline (see Table 5 and also Appendix H, Figures 1 through 3). The tidal influence in certain wells along the coastline (for example, MW-27, MW-45, MW-65, 2090ER, 2090LR) was greater than the reported water level change during pumping and consequently, any influence from pumping is indiscernible.

- Thirty-four of the 43 shallow Pleistocene monitoring wells gauged showed a continued drop in water level during the first month following the system-wide test completion, between 18 May 2018 and 20 June 2018. Drawdown for all wells ranged from -0.75 feet to 5.80 feet with an average of 0.49 feet (Table 5). Those wells experiencing a slight rise in water level included MW-5, MW-65, 2090ER (each in the Stonehouse Cove area), MW-10, 15, 16, 33, 45 and 2090LR (each in the Curtis Bay Area). The rise in water levels may be reflective of pumping induced drawdown coupled with a rise in the tide at the time of measurement or localized recharge.

- Each of the 19 intermediate Patapsco aquifer monitoring wells gauged showed a drop in water level during the first month following the system-wide test completion, between 18 May 2018 and 20 June 2018. Drawdown for all wells ranged from 0.15 feet to 2.85 feet with an average change of 1.12 feet (Table 5). Wells in the interior of the Site showed decreases in water levels, including MW-12A and MW-3A, indicating Site-wide drop in the potentiometric surface of the Patapsco Aquifer due to regional discharging conditions rather than an influence from pumping. Although the surface water elevation in Curtis Bay was not measured during the intermediate system test, the rise and fall of water levels in the intermediate aquifer monitored during the week-long system test exhibit the same pattern in magnitude and frequency as was measured at the Stonehouse Cove pier. As is illustrated in Figure 3 in Appendix H, the potentiometric surface in the intermediate aquifer is directly influenced by the tidal pressures.

3.3 SYSTEM-WIDE CAPTURE ANALYSIS

The changes to the system-wide recovery system indicate that capture of impacted ground water is optimized for the reasons provided below.

- Within the pumping arrays, test results show that the new recovery wells are collectively drawing down the ground water table in the shallow aquifer adjacent to Stonehouse Cove between wells RW-2090CR and RW-2090G, as well as the along Curtis Bay between wells RW-2090L and RW-2091A1 (see Figure 6).

- System-wide pumping test results show that the new recovery well configuration is mitigating facility-related ground water contamination from entering Stonehouse

Cove and Curtis Bay. As shown on Figure 6A the equipotential contours and inferred directions of ground water flow in the Pleistocene aquifer illustrate capture of VOC and SVOC impacted ground waters. Specifically,

- Ground water in the Hydrocarbon Investigation Area and vicinity of wells MW-7, MW-37 and MW-42 is collectively drawn into the series of wells that include RW-2090D, DR, E1, ER, and FR;

- Ground water contamination at well MW-28 and in the upgradient interior of the Site is in effect drawn into the RW-2090L cone of depression defined by the 2-foot elevation contour on Figure 6A; and

- Additional capture is expected to be attained during the concurrent pumping at wells RW-2090H and RW-2090J.

- Figure 6A indicates that pumping centers at RW-2091A1, B, C, D, E and E1 are mitigating the discharge of VOCs and SVOCs in ground water in the Pleistocene Aquifer into Curtis Bay. Increases in capture of VOCs and SVOCs are obtained with new recovery wells RW-2091E1 and A1.

- Test results show that the new recovery wells in the intermediate aquifer are influencing the potentiometric surface around wells RW-2092D and RW-2092E indicating increased capture of ground water at these locations (see Figure 7).

- With respect to the intermediate aquifer, the system-wide pumping test results demonstrate the new recovery well configuration is reducing facility-related ground water contamination from entering Curtis Bay. As indicated on Figure 7A, the equipotential contours and inferred directions of ground water flow in the Patapsco aquifer illustrate capture of VOC and SVOC impacted ground waters. The majority of VOC mass is captured by wells RW-2092A, C and D. The addition of well RW-2092G provides recovery of the highest concentrations of VOCs and SVOCs (reported at wells MW-15A and MW-16A). Well RW-2092F continues to capture ground water in the vicinity of well MW-43A.

4.0 FINAL SYSTEM CONFIGURATION

4.1 GROUND WATER CONVEYANCE MODIFICATION

As-built drawings prepared by Parsons Corporation for FMC that illustrate the ground water conveyance modification are included in Appendix I. The new recovery wells were plumbed to convey recovered ground water to the existing common aboveground header piping system. The connection and final configuration are displayed in Appendix I, Drawing 450711-DP-001 – Piping Recovery Well Pump Plan. New header pipe was constructed to connect new shallow well RW-2091A1 and new intermediate well RW-2092G to the conveyance system. New shallow wells RW-2091B1 and RW-2091E1 and the replacement wells along Stonehouse Cove are located under the existing header.

Excavated soil was generated during the construction of the new header connections for wells RW-2091A1 and RW-2092G including excavation to install the new concrete stanchions for support of the aboveground portions of the header and while trenching for placement of conveyance piping to well RW-2092G. The excavated soil was stockpiled and sampled in accordance with the requirements in the SMP. The laboratory analysis of the samples of the stockpiled soil indicated that the soil passed the SMP threshold values, and the soil was spread out in the southeast corner of the Site near well RW-2091A1. The soil has been naturally vegetated.

Each new recovery well was equipped with a dedicated ground water extraction pump to match the pumps in the existing recovery wells. The extraction pumps are controlled by variable frequency drives (VFDs). The new VFDs were connected to the existing Rockwell Automation Supervisory Control and Data Acquisition (SCADA) system so that the operation of the wells would be integrated with the existing wells, and the system was reprogrammed to include the new wells.

4.2 GROUND WATER RECOVER SYSTEM OPTIMIZATION

The final configuration of the Site-wide recovery system is shown on Figure 8. As displayed on Figure 8, the final reconfiguration of the recovery well system includes the following elements:

- Stonehouse Cove shallow aquifer recovery wells:
    - Operate wells RW-2090C, DR, ER, E1, F, FR, G, H, J and L; and
    - Take off-line wells RW-2090A, B, D, E, K, and M.
- Curtis Bay shallow aquifer recovery wells:

    - Operate wells RW-2091A1, B, C, D, E, E1, and F; and
    - Take off-line wells RW-2091A.
- Intermediate aquifer recovery wells:
    - Operate wells RW-2092A, B, C, D, F and G; and
    - Take off-line well RW-2092E.

System-wide operating parameters for the performance for the reconfigured system based on the results of system testing are summarized Table 7. The ground water recovery system is configured to withdrawal ground water from the Pleistocene and Patapsco aquifer at an average rate of 30-34 gpm (43,000 to 50,000 gallons per day), equivalent to design capacity of the GWTP. The system will continue to be operated in a manner similar to how to was previously operated, namely with about 20 gpm withdrawn from the shallow wells and 10 gpm withdrawn from the intermediate wells. Extracted ground water will continue to be managed in the above ground storage tanks until treated and discharged to the City of Baltimore municipal sewer.

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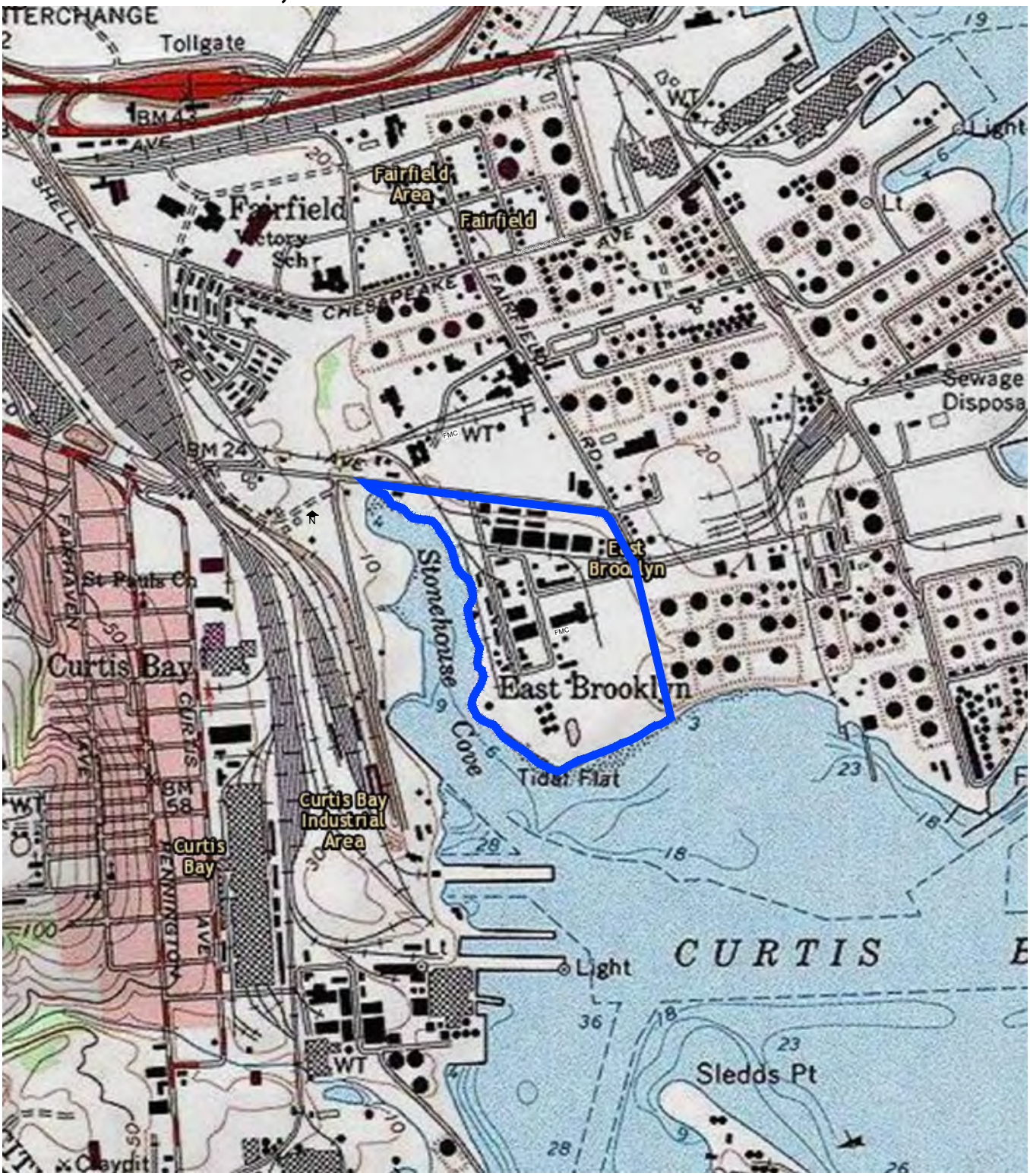
USEPA, 2017. Letter from Mr. William Wentworth, USEPA to Mr. Douglas Groux, FMC, approving the Corrective Measures Implementation Work Plan for Ground Water, 25 January 2017.

FIGURES

FIGURE 1
SITE LOCATION MAP
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



LEGEND

FMC MAIN PLANT PARCEL BOUNDARY

1200 600 0 1200

SCALE IN FEET

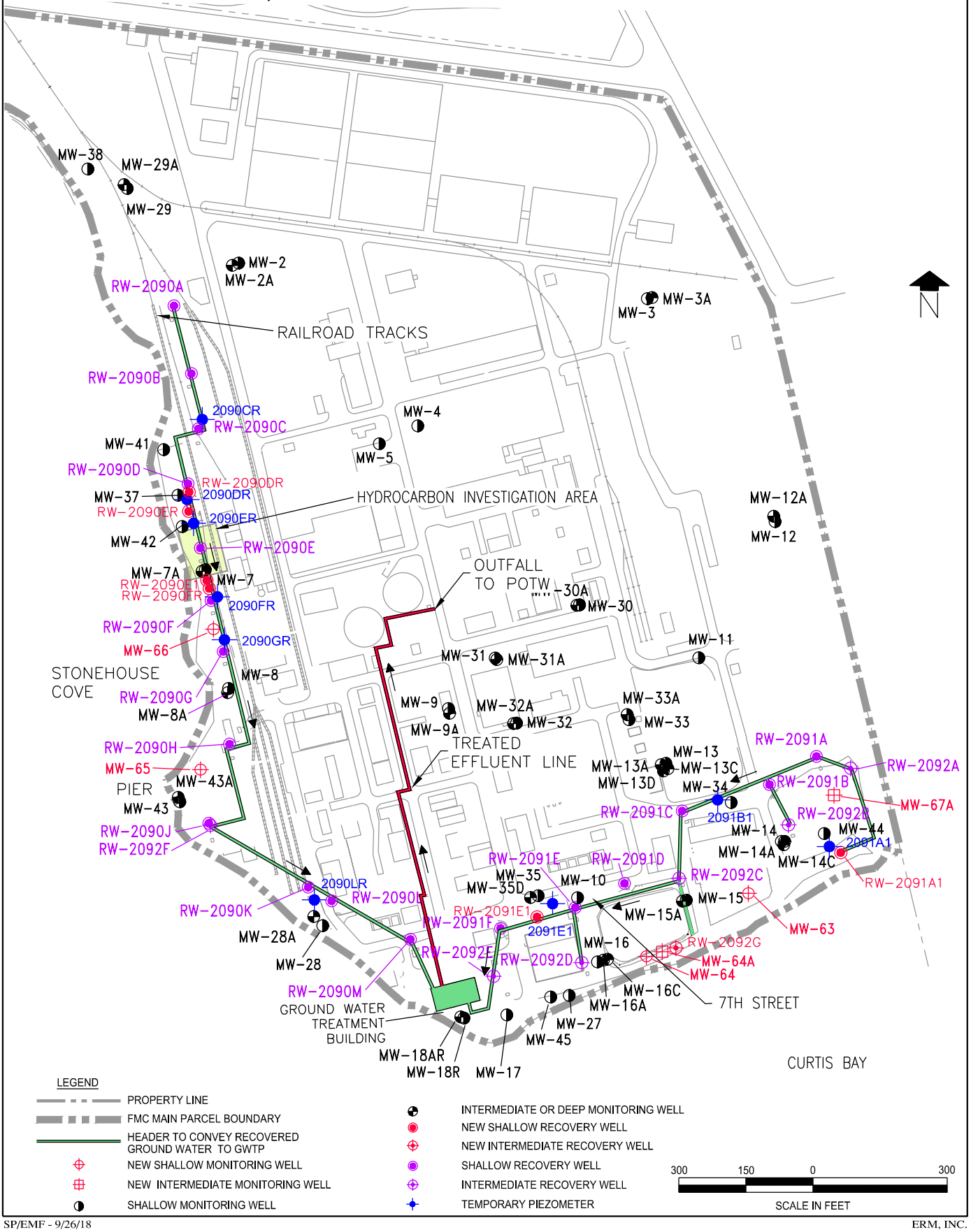
SOURCE: USGS QUAD

SP/EMF - 9/25/18

ERM, INC.

\\usholdc01\data\Team\DMMV\Spencer's Projects\Drawings\FMC\0326266\Figure 1 - Site Topo Map.dwg, 9/25/2018 11:34:10 AM, elizabeth.mikuckiffe

FIGURE 2
RECOVERY WELL AND MONITORING WELL LOCATION MAP
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



SP/EMF - 9/26/18

ERM, INC.

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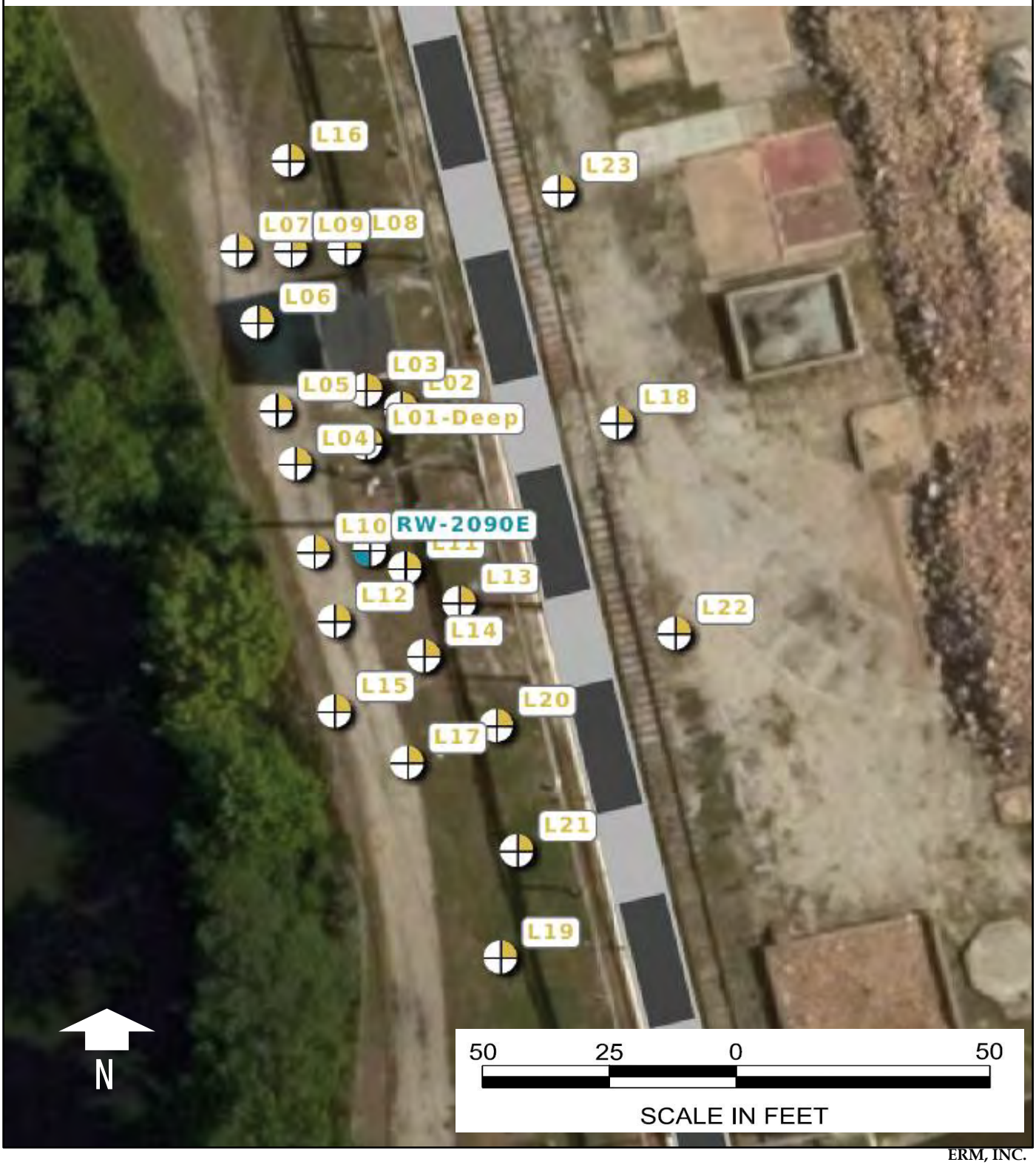
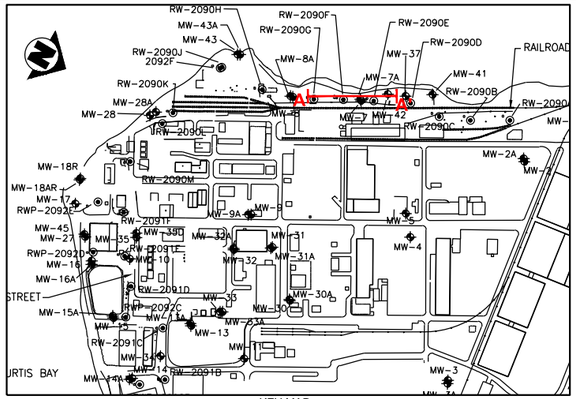
FIGURE 3
LIF SURVEY STATION ID NUMBERS
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



ERM, INC.

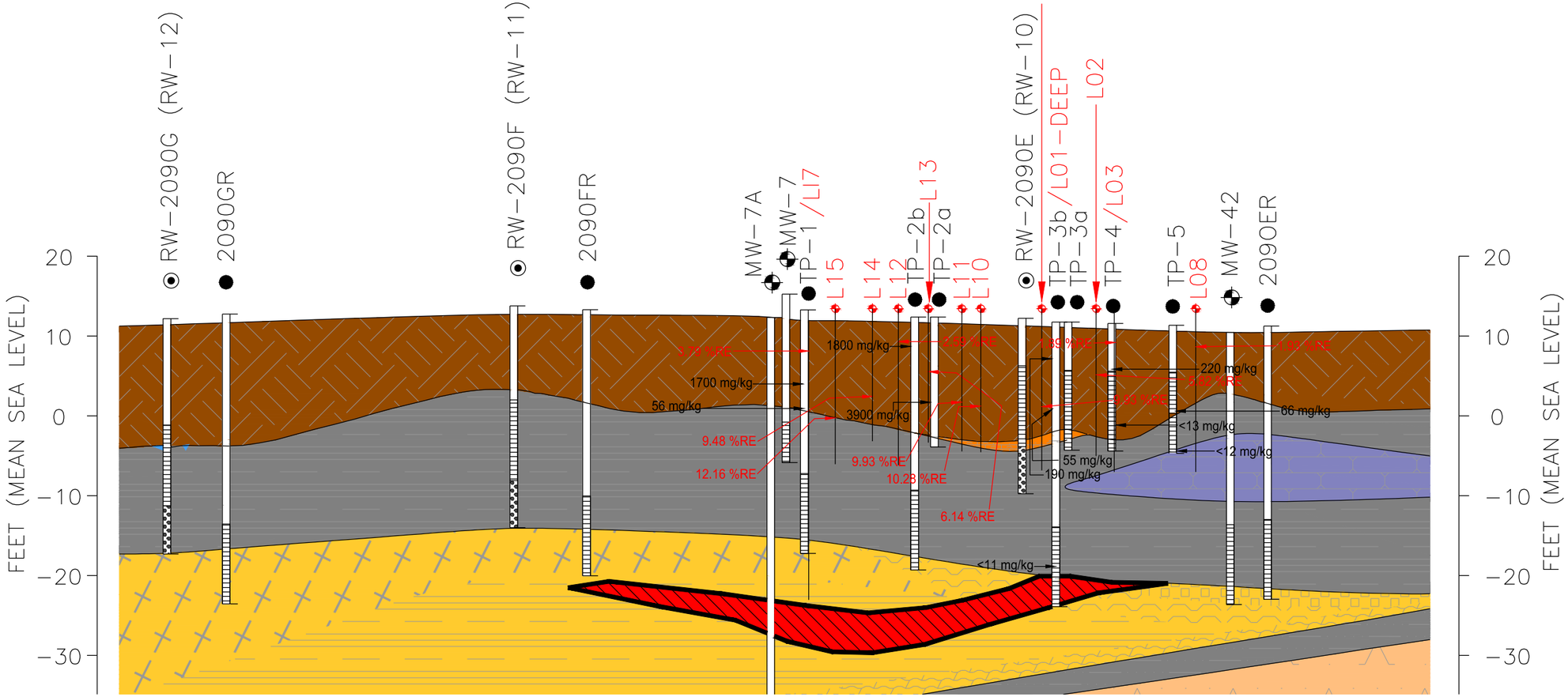
FIGURE 4
CROSS-SECTION A - A' SOIL ANALYTICAL RESULTS AND MAXIMUM LIF RESPONSE READINGS
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



KEY MAP

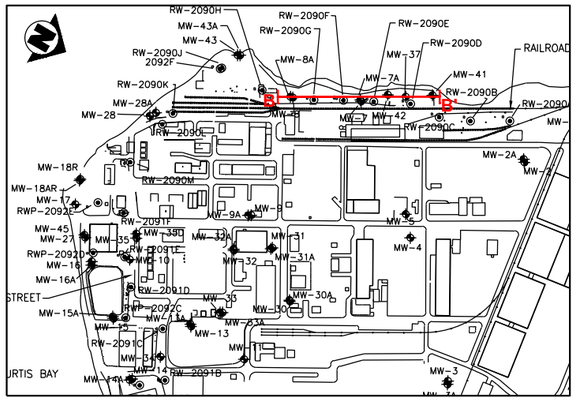
600 300 0 600

SCALE IN FEET



M:\Scout\Projects\FMC\Baltimore\CAD\2016 - Corrective Measures Study_CMS\2017-5 - FMC - Cross Section A-A - Analytical Results an dMax LIF Response Readings - V2.dwg, 9/25/2018 12:47:42 PM, elizabeth.mikuckfile

FIGURE 5A
GEOLOGIC CROSS-SECTION B - B'
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



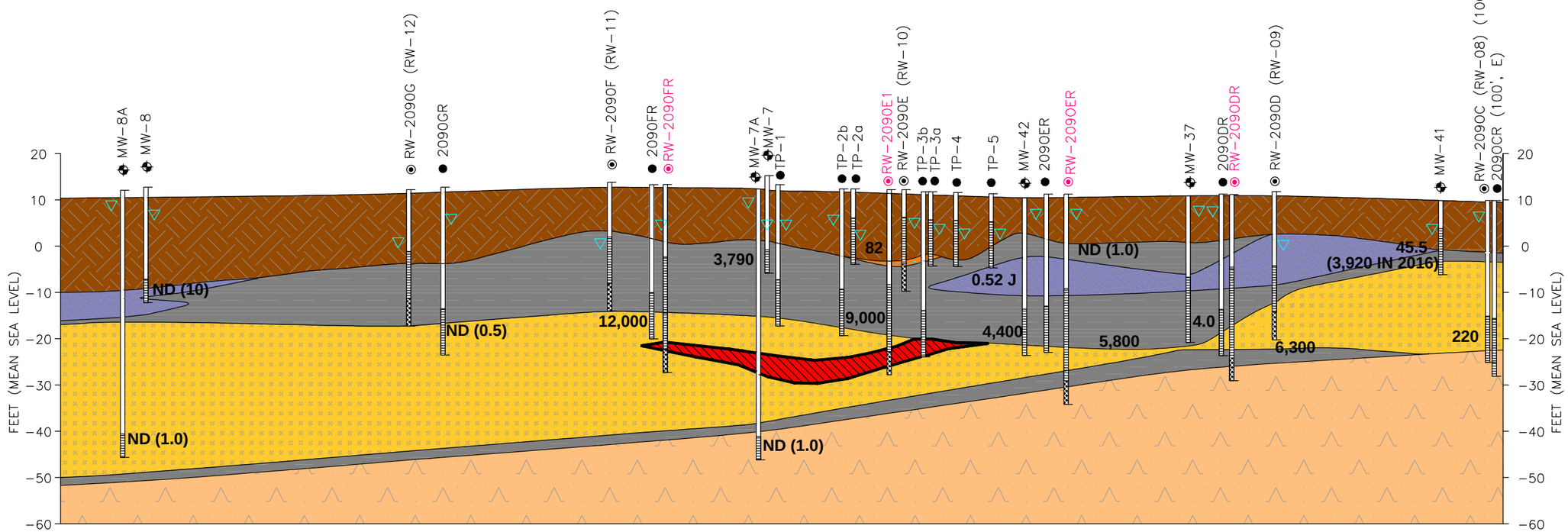
KEY MAP

600 300 0 600

SCALE IN FEET

LEGEND

TP-4	MONITORING WELL
RW-2090G (RW-12)	RECOVERY WELL
RW-2090DR	NEW RECOVERY WELL
2090DR	TEMPORARY PIEZOMETER
	FILL
	GRAY SILTY CLAY
	PEAT
	SILT, SAND AND SOME CLAY
	SAND, SILT AND SOME GRAVEL
	SILTY CLAY
	SILTY, FINE TO COARSE SAND (PATAPSCO)
	RED CLAY
	CASED INTERVAL
	SCREENED INTERVAL
	SUMP INTERVAL
	WATER LEVEL (FT BGS) ON 20 JUNE 2018
72.0	CHLOROBENZENE CONCENTRATION (ug/L) ON 25 APRIL 2017

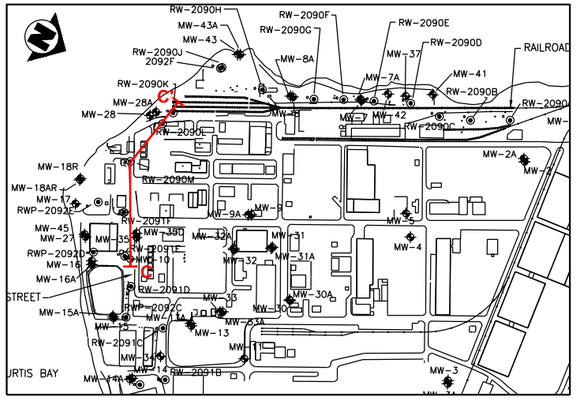


50 25 0 50

HORIZONTAL SCALE IN FEET
2x VERTICAL EXAGGERATION

M:\Scout\Projects\FMC\Baltimore\CAD\2016 - Corrective Measures Study_CMS\2016-7 - FMC - Cross Section A-A_Vertical Capture in Shallow Zone - V10.dwg, 9/25/2018 12:48:34 PM, elizabeth.mikuckifle

FIGURE 5B
GEOLOGIC CROSS-SECTION C - C'
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



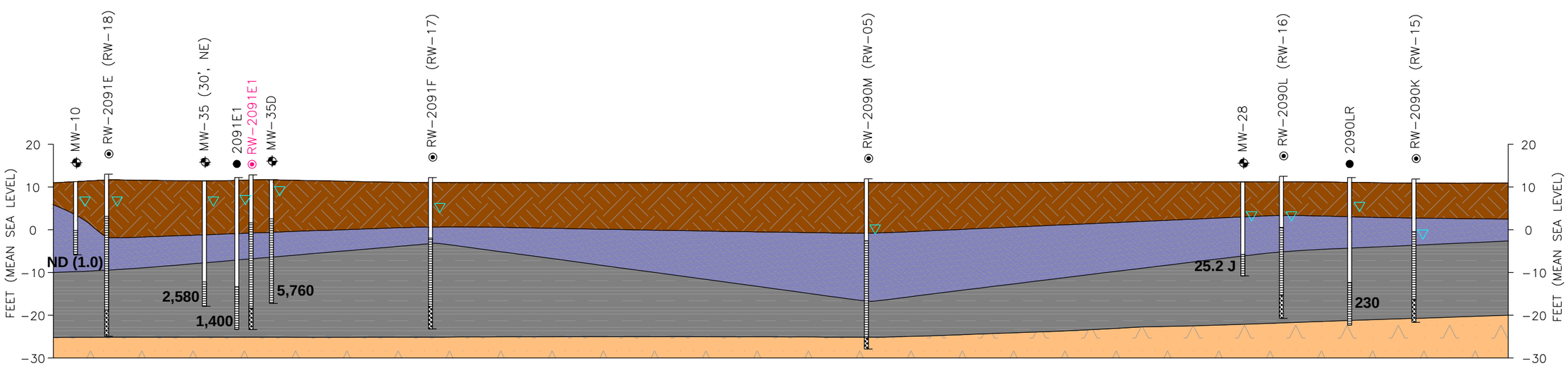
KEY MAP

600 300 0 600

SCALE IN FEET

LEGEND

TP-4	MONITORING WELL
RW-2090G (RW-12)	RECOVERY WELL
RW-2091E1	NEW RECOVERY WELL
2090LR	TEMPORARY PIEZOMETER
	FILL
	GRAY SILTY CLAY
	SILT, SAND AND SOME CLAY
	SILTY, FINE TO COARSE SAND (PATAPSCO)
	CASED INTERVAL
	SCREENED INTERVAL
	SUMP INTERVAL
▽	WATER LEVEL (FT BGS) ON 20 JUNE 2018
230	CHLOROBENZENE CONCENTRATION (ug/L) ON 25 APRIL 2017

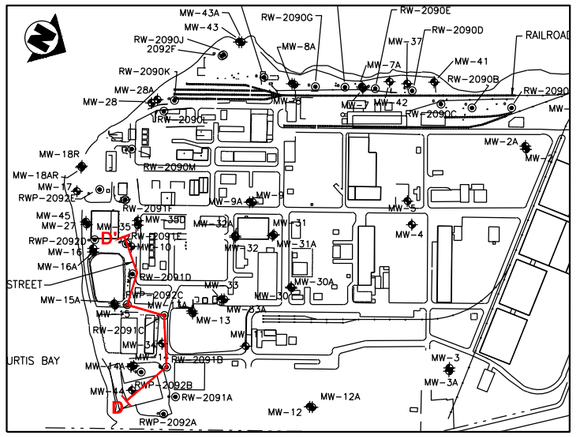


50 25 0 50

HORIZONTAL SCALE IN FEET
2x VERTICAL EXAGGERATION

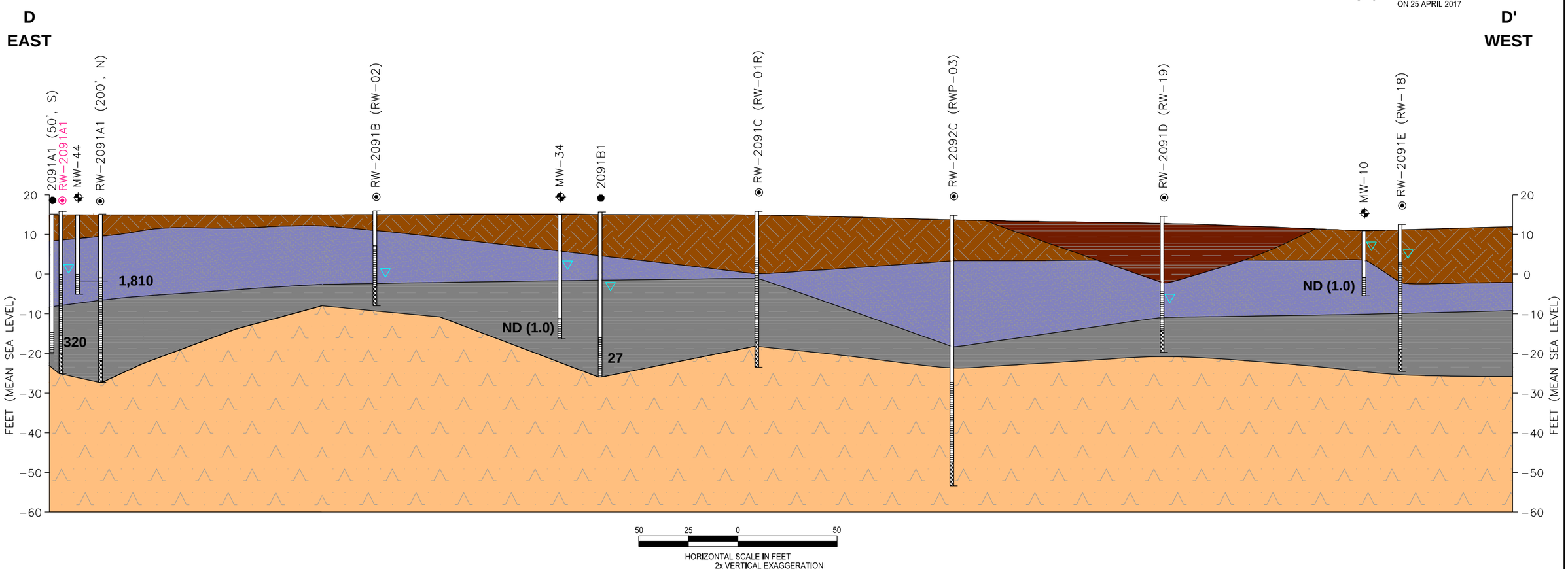
M:\Scout\Projects\FMC\Baltimore\CAD\2016 - Corrective Measures Study_CMS\2016-7 - FMC - Cross Section A-A_Vertical Capture in Shallow Zone - V10.dwg, 9/25/2018 12:48:55 PM, elizabeth.mikuckifle

FIGURE 5C
GEOLOGIC CROSS-SECTION D - D'
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



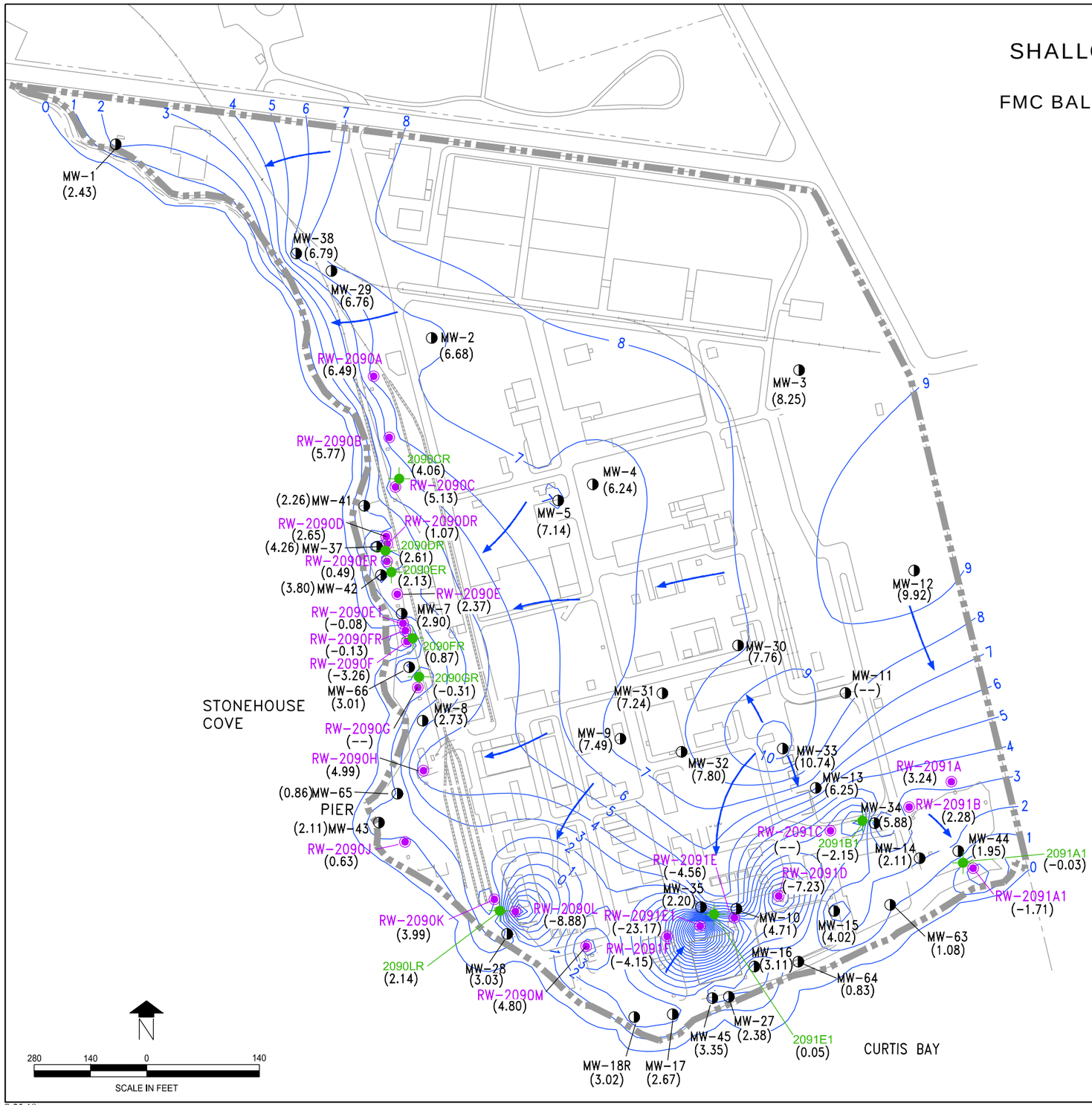
LEGEND

TP-4	MONITORING WELL
RW-2090G (RW-12)	RECOVERY WELL
RW-2091A1	NEW RECOVERY WELL
2091B1	TEMPORARY PIEZOMETER
	FILL
	CLAY LINER
	GRAY SILTY CLAY
	SILT, SAND AND SOME CLAY
	SILTY, FINE TO COARSE SAND (PATAPSCO)
	CASED INTERVAL
	SCREENED INTERVAL
	SUMP INTERVAL
	WATER LEVEL (FT BGS) ON 20 JUNE 2018
320	CHLOROBENZENE CONCENTRATION (ug/L) ON 25 APRIL 2017



M:\Scout\Projects\FMC\Baltimore\CAD\2016 - Corrective Measures Study_CMS\2016-7 - FMC - Cross Section A-A_Vertical Capture in Shallow Zone - V10.dwg, 9/25/2018 12:51:41 PM, elizabeth.mikuckifle

FIGURE 6
SHALLOW AQUIFER POTENTIOMETRIC SURFACE CONTOURS
20 JUNE 2018
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



LEGEND

- PROPERTY LINE
- FMC MAIN PARCEL BOUNDARY
- 7 — SHALLOW GROUND WATER CONTOUR ELEVATION (20 JUNE 2018) CONTOUR INTERVAL 1 FOOT
- SHALLOW MONITORING WELL
- SHALLOW RECOVERY WELL
- TEMPORARY PIEZOMETER
- GENERAL GROUND WATER FLOW DIRECTION
- (3.12) MEASURED GROUND WATER ELEVATION

NOTES:

1. TEMPORARY PIEZOMETERS INSTALLED APRIL 3 TO APRIL 18, 2017.
2. SHALLOW RECOVERY WELLS RW-2090DR, RW-2090ER, RW-2090EI, RW-2090FR, RW-2090A1, AND RW-2091E1 INSTALLED JULY 27 TO AUGUST 28, 2017.
3. INTERMEDIATE RECOVERY WELL RW-2092G INSTALLED AUGUST 22 TO AUGUST 25, 2017.
4. THE GROUND WATER CONTOUR INTERVAL IS 1 FOOT.
5. 0-FOOT CONTOUR IN STONEHOUSE IS FOR ILLUSTRATIVE PURPOSES ONLY AND NOT BASED ON MEASURED DATA.
6. WELL MW-11 CONTAINS LNAPL AND WAS NOT MEASURED.

7-25-18

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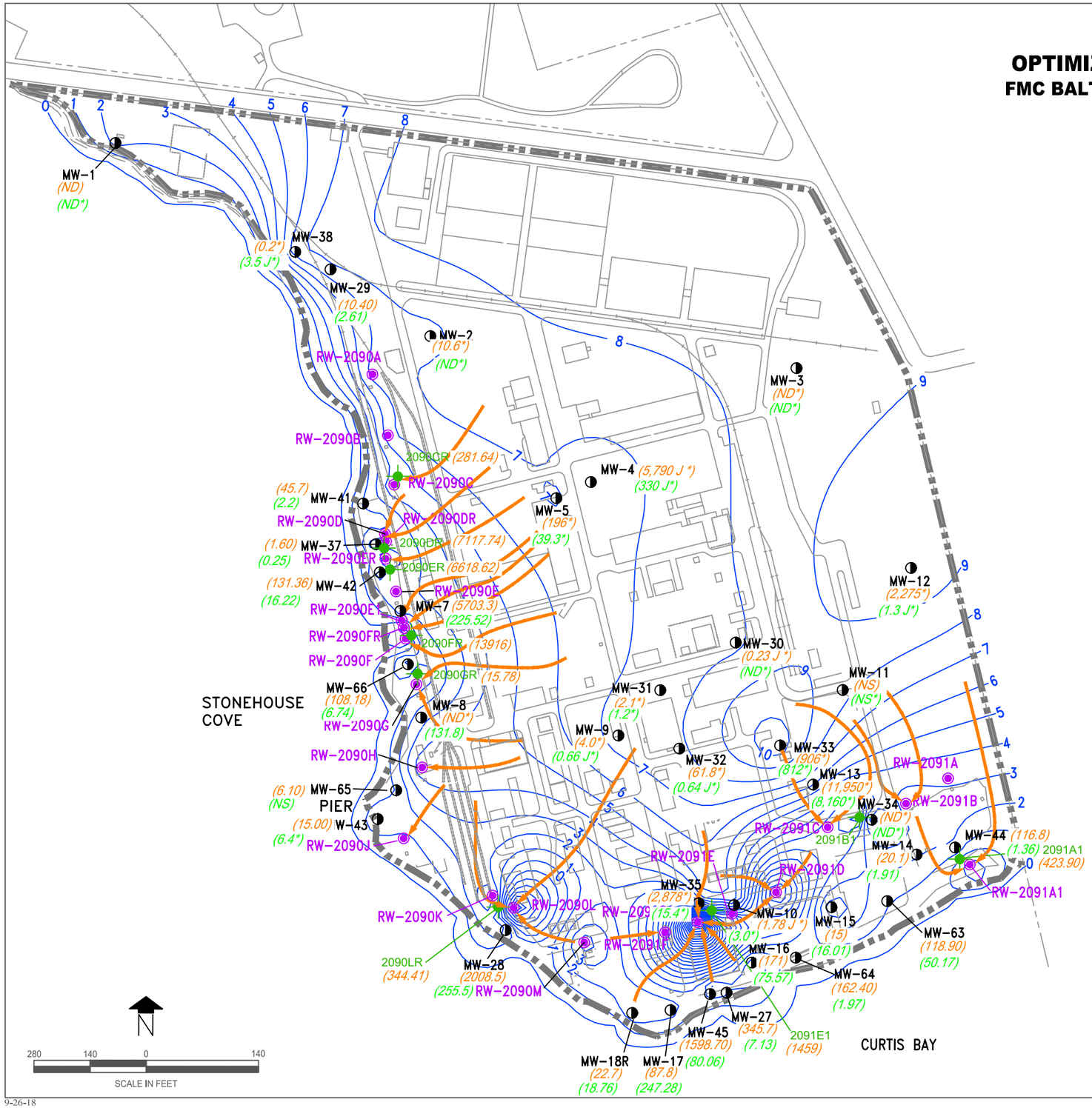
FIGURE 6A
OPTIMIZATION OF RECOVERY OF SHALLOW GROUND WATER
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



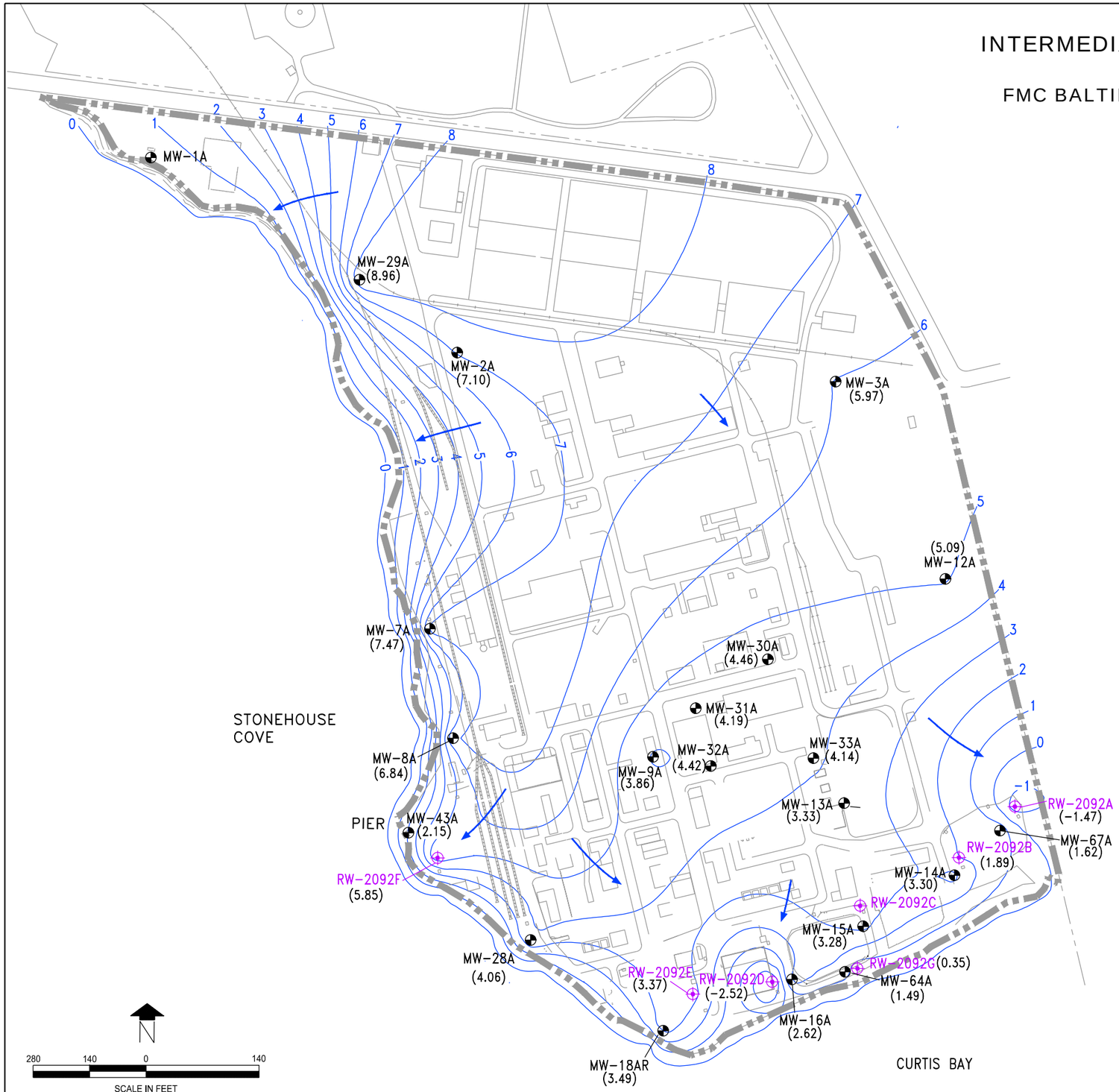
LEGEND

- PROPERTY LINE
- FMC MAIN PARCEL BOUNDARY
- 7 — SHALLOW GROUND WATER CONTOUR ELEVATION (20 JUNE 2018) CONTOUR INTERVAL 1 FOOT
- SHALLOW MONITORING WELL
- SHALLOW RECOVERY WELL
- TEMPORARY PIEZOMETER
- (8.7) TOTAL VOCs CONCENTRATION (ug/L)
- (NS) NOT SAMPLED
- (ND) NOT DETECTED
- INFERRED GROUND WATER CAPTURE
- (8.7) TOTAL SVOCs CONCENTRATION (ug/L)
- (NS) NOT SAMPLED
- (ND) NOT DETECTED

NOTES:

1. TEMPORARY PIEZOMETERS INSTALLED APRIL 3 TO APRIL 18, 2017.
2. SHALLOW RECOVERY WELLS RW-2090DR, RW-2090ER, RW-2090EI, RW-2090FR, RW-2090A1, AND RW-2091E1 INSTALLED JULY 27 TO AUGUST 28, 2017.
3. THE GROUND WATER CONTOUR INTERVAL IS 1 FOOT.
4. 0-FOOT CONTOUR IN STONEHOUSE IS FOR ILLUSTRATIVE PURPOSES ONLY AND NOT BASED ON MEASURED DATA.
5. VOC AND SVOC DATA COLLECTED IN AUGUST 2017 AND APRIL 2017.
6. * MOST RECENT DATA AVAILABLE IS FROM SPRING 2013.

FIGURE 7
INTERMEDIATE AQUIFER POTENTIOMETRIC SURFACE CONTOURS
20 JUNE 2018
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



LEGEND

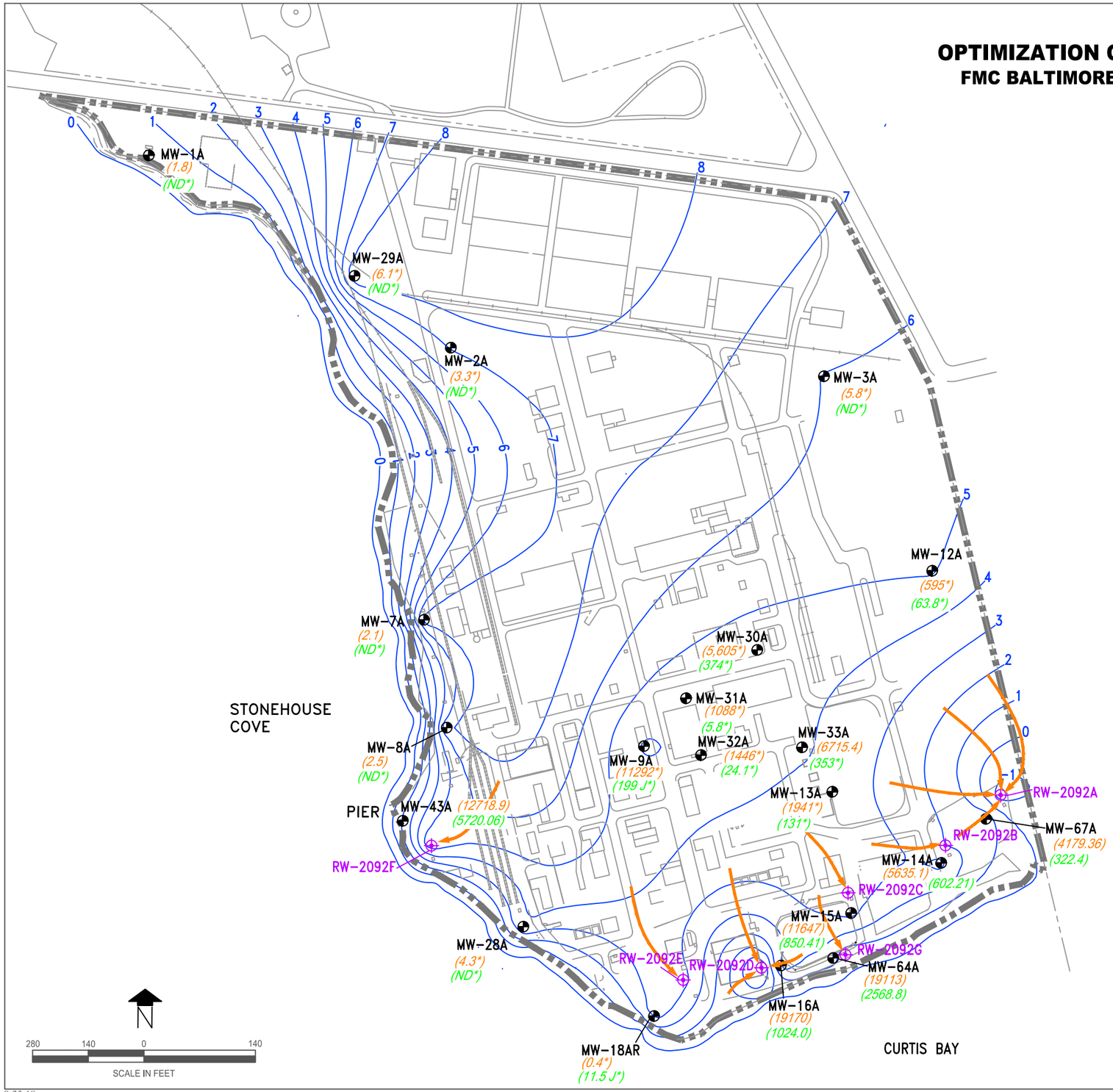
- PROPERTY LINE
- FMC MAIN PARCEL BOUNDARY
- 5 — INTERMEDIATE GROUND WATER CONTOUR ELEVATION (20 JUNE 2018) CONTOUR INTERVAL 1 FOOT
- INTERMEDIATE OR DEEP MONITORING WELL
- INTERMEDIATE RECOVERY WELL
- GENERAL GROUND WATER FLOW DIRECTION
- (3.12) MEASURED GROUND WATER ELEVATION

NOTES:

1. TEMPORARY PIEZOMETERS INSTALLED APRIL 3 TO APRIL 18, 2017.
2. SHALLOW RECOVERY WELLS RW-2090DR, RW-2090ER, RW-2090E1, RW-2090FR, RW-2090A1, AND RW-2091E1 INSTALLED JULY 27 TO AUGUST 28, 2017.
3. INTERMEDIATE RECOVERY WELL RW-2092G INSTALLED AUGUST 22 TO AUGUST 25, 2017.
4. THE GROUND WATER CONTOUR INTERVAL IS 1 FOOT.
5. 0-FOOT CONTOUR IN STONEHOUSE COVE IS FOR ILLUSTRATIVE PURPOSES ONLY AND NOT BASED ON MEASURED DATA.
6. WELL MW-1A WAS ARTESIAN AND NOT MEASURED.
7. RW-2092C SAMPLE PORT WAS OBSTRUCTED AND NOT MEASURED.

\\usmeldc01\CAD-GIS\Scout\Projects\FMC\Baltimore\CAD\2018-06 - FMC - SITE-V3.dwg, Fig7-INTERMEDIATE GW JUNE 2018, 8/2/2018 2:50:44 PM, robert.keen

FIGURE 7A
OPTIMIZATION OF RECOVERY OF INTERMEDIATE GROUND WATER
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

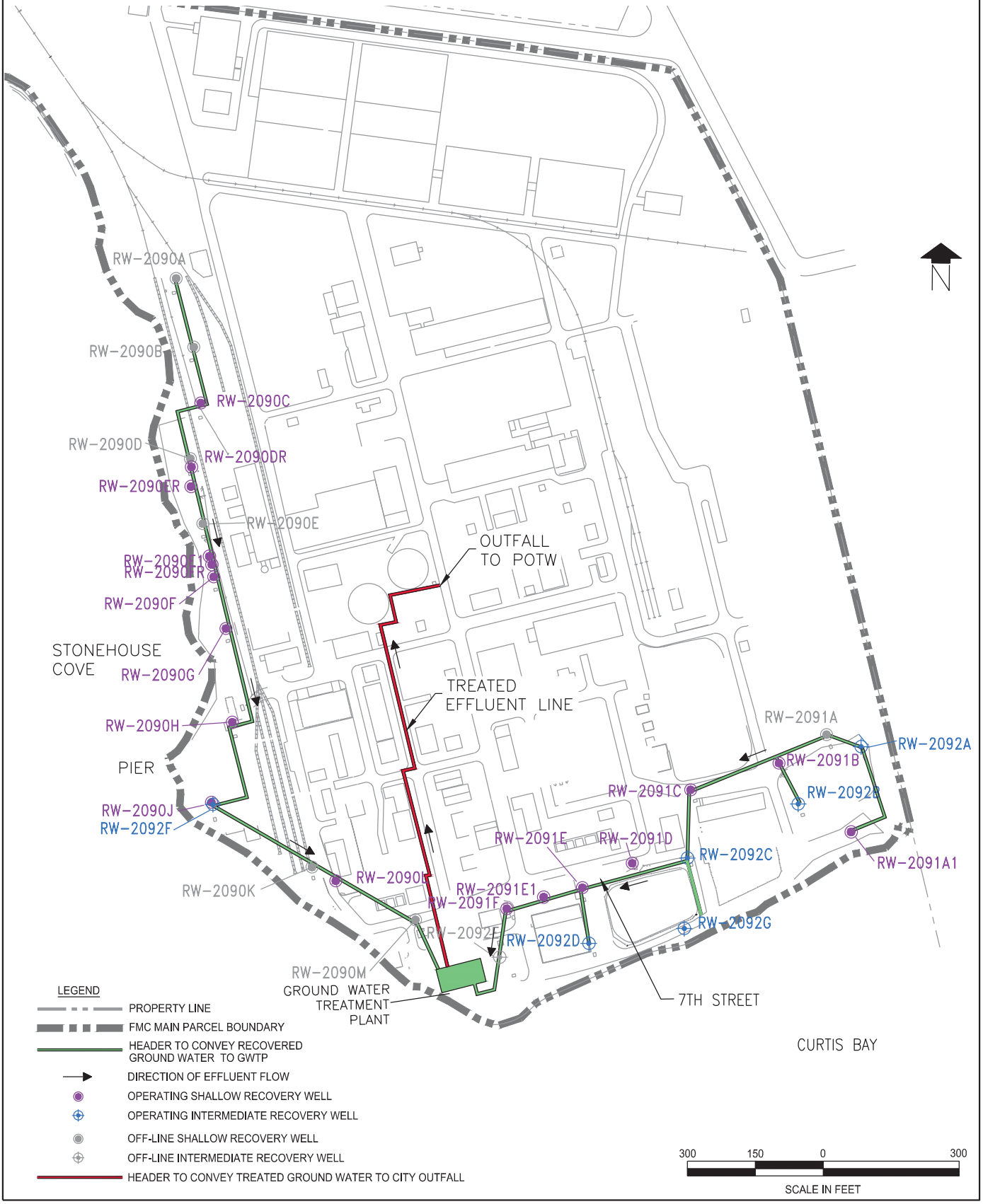


LEGEND

- PROPERTY LINE
- FMC MAIN PARCEL BOUNDARY
- 5 — INTERMEDIATE GROUND WATER CONTOUR ELEVATION (20 JUNE 2018) CONTOUR INTERVAL 1 FOOT
- INTERMEDIATE OR DEEP MONITORING WELL
- INTERMEDIATE RECOVERY WELL
- (8.7) TOTAL VOCs CONCENTRATION (ug/L)
- INFERRED GROUND WATER CAPTURE
- (8.7) TOTAL SVOCs CONCENTRATION (ug/L)
- (ND) NOT DETECTED

NOTES:
1. INTERMEDIATE RECOVERY WELL RW-2092G INSTALLED AUGUST 22 TO AUGUST 25, 2017.
2. THE GROUND WATER CONTOUR INTERVAL IS 1 FOOT.
3. 0-FOOT CONTOUR IN STONEHOUSE COVE IS FOR ILLUSTRATIVE PURPOSES ONLY AND NOT BASED ON MEASURED DATA.
4. VOC DATA COLLECTED IN AUGUST 2017 AND APRIL 2017.
5. * MOST RECENT DATA AVAILABLE IS FROM SPRING 2013.

FIGURE 8
GROUND WATER RECOVERY SYSTEM FINAL CONFIGURATION
WELL LOCATION MAP
FMC BALTIMORE, FORMER AGRICULTURAL PRODUCTS GROUP FACILITY



Q:\Team\DMMV\Spencer's Projects\Drawings\FMC\0414901\0414901-Fig8.dwg, FIG 8 - GW SysDesign, 8/31/2018 10:41:10 AM, FAK

8/31/18

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TABLES

Table 1 - Piezometer Construction Details
FMC Baltimore, Former Agricultural Products Group Facility

Piezometer ID	Borehole Diameter (in)	Piezometer Diameter (in)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Screen Length (ft)
Shallow Piezometer ID					
2090CR	6	2	35	25-35	10
2090DR	6	2	35	25-35	10
2090ER	6	2	35	25-35	10
2090FR	6	2	33.3	25.3-33.3	10
2090GR	6	2	36.3	26.3-36.3	10
2090LR	6	2	34.5	24.5-34.5	10
2091A1	6	2	35	25-35	10
2091B1	6	2	41.6	31.6-41.6	10
2091E1	6	2	35	25-35	10
Temporary Piezometer ID					
TP-1	6	2	30.5	20.5-30.5	10
TP-2a	6	2	15.9	5.9-15.9	10
TP-2b	6	2	35	25-35	10
TP-3a	6	2	15.9	5.9-15.9	10
TP-3b	6	2	35	25-35	10
TP-4	6	2	16	6-16	10
TP-5	6	2	16	6-16	10

Notes:
in - inch.
ft - feet.
bgs - below ground surface.
All piezometers constructed with Schedule 40 PVC well screen and riser pipe.
Piezometer well screens are 0.01-inch slot size.

Table 2 - Investigation Water Quality Results
FMC Baltimore, Former Agricultural Products Group Facility

Parameters	Well ID	2090 C	2090 D	2090 E	2090 F	2090 G	2090 L	2091 E1	DUP-1 (2091E1)	2091 B1	2091 A1	MW-64A
	Sample Date	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	4/25/2017	8/4/2017
Volatile Organic Compounds (µg/L)												
Acetone		ND (10)	6.1 J	6.9 J	ND (1,000)	ND (10)	ND (10)	ND (100)	ND (100)	13	23	62
Benzene		1.4	4.2	7.6	56 J	ND (1.0)	1.1	36	34	3.4	52	1000
Bromodichloromethane		ND (1.0)	ND (1.0)	1.8	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	0.54 J
Chlorobenzene		220	6300	5800	12000	ND (1.0)	230	1400	1400	27	320	14000
Chloroethane		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	2.2
Chloroform		2.5	2.9	12	ND (100)	2.8	2.8	ND (10)	ND (10)	ND (1.0)	ND (1.0)	14
Cyclohexane		ND (10)	ND (10)	ND (10)	ND (1,000)	ND (10)	ND (10)	ND (100)	ND (100)	ND (10)	ND (10)	7.2 J
1,2-Dichlorobenzene		10	160	150	290	ND (1.0)	9.7	ND (10)	ND (10)	ND (1.0)	1.7	330
1,3-Dichlorobenzene		0.59 J	ND (1.0)	3.8	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	11
1,4-Dichlorobenzene		39	630	610	1400	ND (1.0)	42	12	12	0.74 J	3	1600
1,2-Dichloroethane		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	42	ND (10)	ND (10)	13	ND (1.0)	70
1,1-Dichloroethene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	0.88 J	ND (10)	ND (10)	ND (1.0)	ND (1.0)	4
1,2-Dichloropropane		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	1.2
cis-1,2- Dichloroethene		1.1	ND (1.0)	ND (1.0)	ND (100)	2.7	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	31
trans-1,2- Dichloroethene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	3.8
Ethylbenzene		ND (1.0)	ND (1.0)	0.51 J	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	1.1	2.5	11
Isopropyl benzene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	0.52 J
Methylcyclohexane		ND (10)	ND (10)	ND (10)	ND (1,000)	ND (10)	ND (10)	ND (100)	ND (100)	ND (10)	ND (10)	7.4 J
Methyl-t-butyl ether		0.55 J	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	0.66 J	12	ND (1.0)
Naphthalene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	0.91 J	ND (1.0)	190
Styrene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	1.5
Tetrachloroethene		0.91 J	1.5	1.3	ND (100)	0.68 J	1.2	ND (10)	ND (10)	ND (1.0)	ND (1.0)	3.2
Toluene		ND (1.0)	0.78 J	1.3	ND (100)	6.4	ND (1.0)	11	11	3	4.2	23
1,2,3-Trichlorobenzene		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	0.92 J
1,2,4-Trichlorobenzene		4.7	11	16	170	ND (1.0)	3.6	ND (10)	ND (10)	ND (1.0)	ND (1.0)	61
1,1,2-Trichloroehthane		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	9.8	ND (10)	ND (10)	ND (1.0)	ND (1.0)	23
Trichloroethene		0.89 J	0.51 J	0.71 J	ND (100)	3.2	ND (1.0)	ND (10)	ND (10)	ND (1.0)	ND (1.0)	7
Vinyl Chloride		ND (1.0)	ND (1.0)	ND (1.0)	ND (100)	ND (1.0)	0.73 J	ND (10)	ND (10)	2.7	ND (1.0)	10
Total Xylenes		ND (3.0)	0.75 J	0.82 J	ND (300)	ND (3.0)	0.60 J	ND (30)	ND (30)	2.2 J	5.5 J	18.4

Notes:
µg/L - micrograms per liter; equivalent to parts per billion (ppb).
ND - Target analyte was not detected at concentration equal to or above reporting limit. Only those VOCs detected in at least one sample are included in this table.
J - The target analyte was positively identified at a concentration below the reporting limit but greater than the method detection limit.

Table 3. Recovery and Monitoring Well Construction Details
FMC Baltimore, Former Agricultural Products Group Facility

Well ID	Borehole Diameter (in)	Well Diameter (in)	Boring Depth (ft bgs)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Screen Length (ft)	Sump Interval (ft bgs)	Sump Length (ft)	Screen Slot Size (in)	Riser Pipe Construction Material	Well Screen Construction Material	Sump Construction Material
Shallow Recovery Wells												
RW-2090DR	10	6	40	40	15-35	20	35-40	5	0.01	PVC	Stainless Steel	Stainless Steel
RW-2090ER	12	6	41.55	41.5	21.5-36.5	15	36.5-41.5	5	0.01	PVC	Stainless Steel	Stainless Steel
RW-2090E1	12	6	40	40	20-35	15	35-40	5	0.01	PVC	Stainless Steel	Stainless Steel
RW-2090FR	12	6	40	40	20-35	15	35-40	5	0.01	PVC	Stainless Steel	Stainless Steel
RW-2091A1	12	6	40	40	15-35	20	35-40	5	0.01	PVC	Stainless Steel	Stainless Steel
RW-2091E1	12	6	35	35	10-30	20	30-35	5	0.01	PVC	Stainless Steel	Stainless Steel
Intermediate Recovery Wells												
RW-2092G	12	6	65	65	40-60	20	60-65	5	0.01	PVC	Stainless Steel	Stainless Steel
Shallow Monitoring Wells												
MW-63	6	2	30	30	25-30	5	---	---	0.01	PVC	PVC	---
MW-64	6	2	32	26	21-26	5	---	---	0.01	PVC	PVC	---
MW-65	6	2	32	20	15-20	5	---	---	0.01	PVC	PVC	---
MW-66	6	2	32	31.5	26.5-31.5	5	---	---	0.01	PVC	PVC	---
Intermediate Monitoring Wells												
MW-64A	6	2	60	60	50-60	10	---	---	0.01	PVC	PVC	---
MW-67A	6	2	62	60	50-60	10	---	---	0.01	PVC	PVC	---

Notes:
in - inch.
ft - feet.
bgs - below ground surface.
PVC - Schedule 40 polyvinyl chloride.
Monitoring wells were completed with flush mount pads.
Recovery wells were completed with PVC stickups and locking caps.
All well screens are 0.01-inch slot size.
Well RW-2090DR was constructed inside a 10" diameter steel outer casing.

Table 4 - Summary of Single Well Step Test and Constant Rate Pumping Test Data
FMC Baltimore, Former Agricultural Products Group

1-hr Step Tests

Well ID	RW-2090DR				RW-2090ER				RW-2090E1				RW-2090FR			
Duration (hr)	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr	1hr
Pumping Rates (gpm)	1	2	4	5	1	2	4	5	1	2	4	5	1	2	4	5
Initial/Static Water Level (ft)	7.61	8.83	11.28	11.35	6.71	7.99	9.38	30.43	10.59	11.99	13.63	18.15	9.00	9.99	11.01	15.77
Water Level - end of test (ft)	8.83	11.28	11.35	13.07	7.99	9.38	30.43	39.00	11.99	13.63	18.15	21.40	9.99	11.01	15.77	19.30
Drawdown (ft)	1.22	2.45	0.07 [1]	1.72	1.28	1.39	21.05	8.57 [2]	1.40	1.64	4.52	3.25	0.99	1.02	4.76	3.53

Well ID	RW-2091E1				RW-2092G				RW-2091A1			
Duration (hr)	1hr	1hr	---	---	1hr	1hr	1hr	1hr	1hr	1hr	1hr	---
Pumping Rates (gpm)	1	2	---	---	1	2	4	5	1	2	4	---
Initial/Static Water Level (ft)	7.81	17.65	---	---	12.46	12.67	12.91	13.68	18.00	18.83	20.44	---
Water Level - end of test (ft)	17.65	32.00	---	---	12.67	12.91	13.68	15.36	18.83	20.44	37.00	---
Drawdown (ft)	9.84	14.35 [3]	---	---	0.21	0.24	0.77	1.68	0.83	1.61	16.56 [4]	---

4-hr Constant Rate Pumping Test

Well ID	RW-2090DR	RW-2090ER		RW-2090E1		RW-2090FR		RW-2091E1 [6]		RW-2092G		RW-2091A1 [7]
Duration (hr)	4	4	4	4	4	4	4	4	4	4	4	4
Pumping Rates (gpm)	2.53	2.60	2.60	2.90	2.90	2.73	2.73	0.47	0.47	5.11	5.11	1.50
Initial/Static Water Level (ft)[5]	5.91	23.12	6.71	19.65	10.59	17.00	9.00	22.63	8.13	14.95	12.46	18.20
Water Level - end of test (ft)	9.44	18.93	18.93	16.31	16.31	13.70	13.70	22.62	22.62	15.24	15.24	19.62
Drawdown (ft)	3.53	-4.19 [5]	12.22	-3.34 [5]	5.72	-3.30 [5]	4.70	-0.01 [5]	14.49	0.29 [5]	2.78	1.42

8-hr Constant Rate Pumping Test

Well ID	RW-2090DR	RW-2090ER	RW-2090E1	RW-2090FR	RW-2091E1	RW-2092G	RW-2091A1
Duration (hr)	8	8	8	8	8	8	7
Pumping Rates (gpm)	2	1.75 - 2.15	2.5 - 2.52	2.5	0.5 - 0.8	2.85	1.5
Initial/Static Water Level (ft)	6.29	7.94	11.27	8.80	7.88	11.69	18.08
Water Level - end of test (ft)	8.52	10.40	14.60	11.84	23.96	12.88	19.55
Drawdown (ft)	2.23	2.46	3.33	3.04	16.08	1.19	1.47

Recommendation of Pumping Rates

Well ID	RW-2090DR	RW-2090ER	RW-2090E1	RW-2090FR	RW-2091E1	RW-2092G	RW-2091A1
Range of Pumping Rates (gpm)	1-2	1-2	1-5	1-5	0.4-0.50	1- >5	1-2
Recommended Pumping Rate (gpm)	2	2	2	2	0.45	6	2

Notes:

1 - During step test at well location RW-2090DR, the water level started to rise during the 4 gpm rate test. Potentially an influx of water from the Stonehouse Cove.
2 - During step test at well location RW-2090ER, the water level drew down to the top of the pump during the 5 gpm rate test. Pumping was stopped at that time.
3 - During step test at well location RW-2091E1, the water level drew down to the top of the pump during the 2 gpm rate test. Pumping was stopped at that time.
4 - During step test at well location RW-2091A1, the water level drew down to the top of the pump during the 4 gpm rate test. Pumping was stopped at that time.
5 - During the 4-hr pump test, the water level in wells RW-2090ER, RW-2090E1, RW-2090FR, RW-2091E1, and RW-2092G was recovering at the start of the test.
Two drawdowns are listed, one during the start of the test, and another representing true static conditions (used water level prior to pumping of the step tests).
6 - During the 8-hr pump test for RW-2091E1, the pump was left in place to run without the team as they were sheltering in place due to the acid gas release at an adjacent property.
7 - During the 8-hr pump test for RW-2091A1, the generator stopped functioning (no gas, and then would not restart) after approximately 7 hrs of pumping.
Data reported are the manual water level measurements collected during the pumping tests.
gpm=gallons per minute, ft=feet, hr=hour

Table 5 - System-Wide Test Ground Water Elevations
FMC Baltimore, Former Agricultural Products Group

Well ID	Reference Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Change in Elevation between May and June Events (positive number indicates drawdown in ft)
		Non-Pumping Conditions for all Arrays		Pumping Conditions at Stonehouse Cove Array		Non-Pumping Conditions at Curtis Bay and Intermediate Arrays		Pumping Conditions at Stonehouse Cove and Curtis Bay Arrays		Non-Pumping Conditions in the Intermediate Array		Pumping Conditions System-Wide		Pumping Conditions System-Wide		
		4/30/18		5/4/18		5/7/18		5/11/18		5/14/18		5/18/18		6/20/18		
Shallow Zone Monitoring Wells and Piezometers																
MW-1	8.92	NM	--	NM	--	NM	--	NM	--	NM	--	4.62	4.30	6.49	2.43	1.87
MW-2	12.59	NM	--	NM	--	NM	--	NM	--	NM	--	5.69	6.90	5.91	6.68	0.22
MW-3 [1]	17.78	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	9.53	8.25	
MW-4	11.70	NM	--	NM	--	NM	--	NM	--	NM	--	4.75	6.95	5.46	6.24	0.71
MW-5	11.19	NM	--	NM	--	NM	--	NM	--	NM	--	4.69	6.50	4.05	7.14	-0.64
MW-7	14.78	10.79	3.99	11.78	3.00	NM	--	NM	--	NM	--	11.37	3.41	11.88	2.90	0.51
MW-8	12.49	10.18	2.31	10.37	2.12	NM	--	NM	--	NM	--	9.46	3.03	9.76	2.73	0.30
MW-9	12.40	NM	--	NM	--	NM	--	NM	--	NM	--	4.08	8.32	4.91	7.49	0.83
MW-10	10.36	NM	--	5.4	4.96	5.28	5.08	7.65	2.71	NM	--	6.36	4.00	5.65	4.71	-0.71
MW-11 [2]	19.98	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	
MW-12	19.63	NM	--	NM	--	NM	--	NM	--	NM	--	9.45	10.18	9.71	9.92	0.26
MW-13 [3]	17.33	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	11.08	6.25	
MW-14	16.23	NM	--	14.28	1.95	14.32	1.91	14.23	2.00	NM	--	14.00	2.23	14.12	2.11	0.12
MW-15	13.36	NM	--	9.81	3.55	9.73	3.63	9.55	3.81	NM	--	9.76	3.60	9.34	4.02	
MW-16	11.07	NM	--	8.43	2.64	8.38	2.69	8.07	3.00	NM	--	7.98	3.09	7.96	3.11	
MW-17	10.91	NM	--	8.35	2.56	8.43	2.48	8.22	2.69	NM	--	7.46	3.45	8.24	2.67	0.78
MW-18R	9.69	NM	--	7.00	2.69	7.00	2.69	6.80	2.89	NM	--	6.31	3.38	6.67	3.02	0.36
MW-27	11.25	NM	--	9.5	1.75	9.47	1.78	8.88	2.37	NM	--	8.74	2.51	8.87	2.38	0.13
MW-28	12.71	9.88	2.83	10.12	2.59	10.07	2.64	9.84	2.87	NM	--	8.82	3.89	9.68	3.03	0.86
MW-29	11.93	NM	--	NM	--	NM	--	NM	--	NM	--	4.97	6.96	5.17	6.76	0.20
MW-30	16.73	NM	--	NM	--	NM	--	NM	--	NM	--	7.33	9.40	8.97	7.76	1.64
MW-31	14.83	NM	--	NM	--	NM	--	NM	--	NM	--	6.43	8.40	7.59	7.24	1.16
MW-32	14.30	NM	--	NM	--	NM	--	NM	--	NM	--	5.60	8.70	6.50	7.80	0.90
MW-33	13.88	NM	--	NM	--	NM	--	NM	--	NM	--	3.41	10.47	3.14	10.74	-0.27
MW-34	15.07	NM	--	12.43	2.64	12.59	2.48	12.60	2.47	NM	--	3.39	11.68	9.19	5.88	5.80
MW-35	11.00	NM	--	6.78	4.22	6.42	4.58	8.17	2.83	NM	--	8.27	2.73	8.80	2.20	0.53
MW-37	10.10	4.39	5.71	4.9	5.20	NM	--	NM	--	NM	--	5.64	4.46	5.84	4.26	0.20
MW-38	7.72	NM	--	NM	--	NM	--	NM	--	NM	--	0.72	7.00	0.93	6.79	0.21
MW-41	9.44	7.52	1.92	7.63	1.81	NM	--	NM	--	NM	--	6.41	3.03	7.18	2.26	0.77
MW-42	9.87	4.30	5.57	4.90	4.97	NM	--	NM	--	NM	--	5.76	4.11	6.07	3.80	0.31
MW-43	6.04	4.26	1.78	4.48	1.56	NM	--	NM	--	NM	--	3.04	3.00	3.93	2.11	0.89
MW-44	16.85	NM	--	14.98	1.87	14.98	1.87	14.89	1.96	NM	--	14.83	2.02	14.90	1.95	0.07
MW-45	11.23	NM	--	8.14	3.09	7.66	3.57	7.40	3.83	NM	--	8.63	2.60	7.88	3.35	-0.75
MW-63	12.77	NM	--	11.71	1.06	11.75	1.02	11.69	1.08	NM	--	11.51	1.26	11.69	1.08	0.18
MW-64	11.76	NM	--	11.27	0.49	11.18	0.58	10.73	1.03	NM	--	10.60	1.16	10.93	0.83	0.33
MW-65	4.09	3.08	1.01	3.57	0.52	NM	--	NM	--	NM	--	3.42	0.67	3.23	0.86	-0.19

Table 5 - System-Wide Test Ground Water Elevations
FMC Baltimore, Former Agricultural Products Group

Well ID	Reference Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Change in Elevation between May and June Events (positive number indicates drawdown in ft)
		Non-Pumping Conditions for all Arrays		Pumping Conditions at Stonehouse Cove Array		Non-Pumping Conditions at Curtis Bay and Intermediate Arrays		Pumping Conditions at Stonehouse Cove and Curtis Bay Arrays		Non-Pumping Conditions in the Intermediate Array		Pumping Conditions System-Wide		Pumping Conditions System-Wide		
		4/30/18		5/4/18		5/7/18		5/11/18		5/14/18		5/18/18		6/20/18		
MW-66	10.14	6.57	3.57	7.32	2.82	NM	--	NM	--	NM	--	6.67	3.47	7.13	3.01	0.46
2090CR	10.19	6.02	4.17	6.44	3.75	NM	--	NM	--	NM	--	5.76	4.43	6.13	4.06	0.37
2090DR	11.51	7.64	3.87	8.08	3.43	NM	--	NM	--	NM	--	8.71	2.80	8.90	2.61	0.19
2090ER	11.96	8.01	3.95	8.51	3.45	NM	--	NM	--	NM	--	9.84	2.12	9.83	2.13	-0.01
2090FR	14.46	10.72	3.74	11.31	3.15	NM	--	NM	--	NM	--	13.30	1.16	13.59	0.87	0.29
2090GR	9.84	NM	--	10.25	-0.41	NM	--	NM	--	NM	--	9.45	0.39	10.15	-0.31	0.70
2090LR	11.54	NM	--	9.42	2.12	NM	--	NM	--	NM	--	9.61	1.93	9.40	2.14	-0.21
2091A1	19.76	NM	--	10.23	9.53	19.67	0.09	19.67	0.09	NM	--	19.44	0.32	19.79	-0.03	0.35
2091B1	12.70	NM	--	19.68	-6.98	15.05	-2.35	14.70	-2.00	NM	--	14.63	-1.93	14.85	-2.15	0.22
2091E1	16.72	NM	--	15.4	1.32	9.76	6.96	14.37	2.35	NM	--	14.94	1.78	16.67	0.05	1.73
Shallow Recovery Wells																
RW-2090A	10.13	NM	--	NM	--	NM	--	NM	--	NM	--	3.00	7.13	3.64	6.49	0.64
RW-2090B	9.91	NM	--	NM	--	NM	--	NM	--	NM	--	4.00	5.91	4.14	5.77	0.14
RW-2090C	10.13	NM	--	NM	--	NM	--	NM	--	NM	--	4.80	5.33	5.00	5.13	0.20
RW-2090D	11.54	NM	--	NM	--	NM	--	NM	--	NM	--	8.56	2.98	8.89	2.65	0.33
RW-2090DR	8.19	NM	--	NM	--	NM	--	NM	--	NM	--	8.50	-0.31	7.12	1.07	-1.38
RW-2090E	11.86	NM	--	NM	--	NM	--	NM	--	NM	--	9.22	2.64	9.49	2.37	0.27
RW-2090ER	10.43	NM	--	NM	--	NM	--	NM	--	NM	--	10.00	0.43	9.94	0.49	-0.06
RW-2090E1	12.03	NM	--	NM	--	NM	--	NM	--	NM	--	12.20	-0.17	12.11	-0.08	-0.09
RW-2090F	13.26	NM	--	NM	--	NM	--	NM	--	NM	--	15.32	-2.06	16.52	-3.26	1.20
RW-2090FR	12.42	NM	--	NM	--	NM	--	NM	--	NM	--	12.00	0.42	12.55	-0.13	0.55
RW-2090G	11.82	NM	--	NM	--	NM	--	NM	--	NM	--	19.07	-7.25	NM [5]	--	
RW-2090H	9.62	NM	--	NM	--	NM	--	NM	--	NM	--	4.39	5.23	4.63	4.99	0.24
RW-2090J	6.89	NM	--	NM	--	NM	--	NM	--	NM	--	6.04	0.85	6.26	0.63	0.22
RW-2090K	12.03	NM	--	NM	--	NM	--	NM	--	NM	--	7.86	4.17	8.04	3.99	0.18
RW-2090L	12.36	NM	--	NM	--	NM	--	NM	--	NM	--	21.02	-8.66	21.24	-8.88	0.22
RW-2090M	11.98	NM	--	NM	--	NM	--	NM	--	NM	--	6.95	5.03	7.18	4.80	0.23
RW-2091A	15.15	NM	--	NM	--	NM	--	NM	--	NM	--	11.73	3.42	11.91	3.24	0.18
RW-2091A1	17.75	NM	--	NM	--	NM	--	NM	--	NM	--	22.00	-4.25	19.46	-1.71	-2.54
RW-2091B	15.65	NM	--	NM	--	NM	--	NM	--	NM	--	13.16	2.49	13.37	2.28	0.21
RW-2091C [6]	15.57	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	
RW-2091D	14.59	NM	--	NM	--	NM	--	NM	--	NM	--	21.66	-7.07	21.82	-7.23	0.16
RW-2091E	12.45	NM	--	NM	--	NM	--	NM	--	NM	--	16.87	-4.42	17.01	-4.56	0.14
RW-2091E1	11.56	NM	--	NM	--	NM	--	NM	--	NM	--	25.00	-13.44	34.73	-23.17	9.73
RW-2091F	12.20	NM	--	NM	--	NM	--	NM	--	NM	--	16.11	-3.91	16.35	-4.15	0.24

Table 5 - System-Wide Test Ground Water Elevations
FMC Baltimore, Former Agricultural Products Group

Well ID	Reference Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Change in Elevation between May and June Events (positive number indicates drawdown in ft)
		Non-Pumping Conditions for all Arrays		Pumping Conditions at Stonehouse Cove Array		Non-Pumping Conditions at Curtis Bay and Intermediate Arrays		Pumping Conditions at Stonehouse Cove and Curtis Bay Arrays		Non-Pumping Conditions in the Intermediate Array		Pumping Conditions System-Wide		Pumping Conditions System-Wide		
		4/30/18		5/4/18		5/7/18		5/11/18		5/14/18		5/18/18		6/20/18		
Intermediate Zone Monitoring Wells																
MW-1A [4]	10.14	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	
MW-2A	12.92	NM	--	NM	--	NM	--	NM	--	NM	--	5.67	7.25	5.82	7.10	0.15
MW-3A	17.59	NM	--	NM	--	NM	--	NM	--	NM	--	9.71	7.88	11.62	5.97	1.91
MW-7A	11.29	NM	--	NM	--	NM	--	NM	--	NM	--	3.40	7.89	3.82	7.47	0.42
MW-8A	12.03	NM	--	NM	--	NM	--	NM	--	NM	--	4.69	7.34	5.19	6.84	0.50
MW-9A	12.32	NM	--	NM	--	NM	--	NM	--	NM	--	7.08	5.24	8.46	3.86	1.38
MW-12A	19.71	NM	--	NM	--	NM	--	NM	--	NM	--	11.77	7.94	14.62	5.09	2.85
MW-13A [3]	19.61	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	16.28	3.33	
MW-14A	17.12	NM	--	NM	--	NM	--	13.05	4.07	12.59	4.53	12.44	4.68	13.82	3.30	1.38
MW-15A	13.13	NM	--	NM	--	NM	--	8.97	4.16	8.51	4.62	8.25	4.88	9.85	3.28	1.60
MW-16A	11.37	NM	--	NM	--	NM	--	7.26	4.11	6.68	4.69	7.63	3.74	8.75	2.62	1.12
MW-18AR	9.91	NM	--	NM	--	NM	--	6.07	3.84	5.45	4.46	5.33	4.58	6.42	3.49	1.09
MW-28A	12.79	NM	--	NM	--	NM	--	NM	--	NM	--	7.63	5.16	8.73	4.06	1.10
MW-29A	11.32	NM	--	NM	--	NM	--	NM	--	NM	--	2.07	9.25	2.36	8.96	0.29
MW-30A	13.72	NM	--	NM	--	NM	--	NM	--	NM	--	8.13	5.59	9.26	4.46	1.13
MW-31A	14.65	NM	--	NM	--	NM	--	NM	--	NM	--	9.25	5.40	10.46	4.19	1.21
MW-32A	15.86	NM	--	NM	--	NM	--	NM	--	NM	--	11.22	4.64	11.44	4.42	0.22
MW-33A	14.47	NM	--	NM	--	NM	--	NM	--	NM	--	9.14	5.33	10.33	4.14	1.19
MW-43A	6.00	NM	--	NM	--	NM	--	NM	--	NM	--	2.98	3.02	3.85	2.15	0.87
MW-64A	11.80	NM	--	NM	--	NM	--	9.41	2.39	8.88	2.92	8.86	2.94	10.31	1.49	1.45
MW-67A	11.91	NM	--	NM	--	NM	--	9.53	2.38	9.03	2.88	8.79	3.12	10.29	1.62	1.50

Table 5 - System-Wide Test Ground Water Elevations
FMC Baltimore, Former Agricultural Products Group

Well ID	Reference Elevation (ft)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Depth to Water (ft btoc)	Ground Water Elevation (ft msl)	Change in Elevation between May and June Events (positive number indicates drawdown in ft)
		Non-Pumping Conditions for all Arrays		Pumping Conditions at Stonehouse Cove Array		Non-Pumping Conditions at Curtis Bay and Intermediate Arrays		Pumping Conditions at Stonehouse Cove and Curtis Bay Arrays		Non-Pumping Conditions in the Intermediate Array		Pumping Conditions System-Wide		Pumping Conditions System-Wide		
		4/30/18		5/4/18		5/7/18		5/11/18		5/14/18		5/18/18		6/20/18		
Intermediate Zone Recovery Wells																
RW-2092A	14.33	NM	--	NM	--	NM	--	NM	--	NM	--	15.70	-1.37	15.80	-1.47	0.10
RW-2092B	15.27	NM	--	NM	--	NM	--	NM	--	NM	--	13.29	1.98	13.38	1.89	0.09
RW-2092C [6]	14.50	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	NM	--	
RW-2092D	12.64	NM	--	NM	--	NM	--	NM	--	NM	--	15.10	-2.46	15.16	-2.52	0.06
RW-2092E	12.17	NM	--	NM	--	NM	--	NM	--	NM	--	8.69	3.48	8.80	3.37	0.11
RW-2092F	9.65	NM	--	NM	--	NM	--	NM	--	NM	--	3.70	5.95	3.80	5.85	0.10
RW-2092G	11.71	NM	--	NM	--	NM	--	NM	--	NM	--	9.80	1.91	11.36	0.35	1.56

NOTES:
Reference Elevations are from January 2009 resurvey, April 2017 piezometer survey, or October 2017 new recovery well and monitoring well survey.
Measurements on April 30, May 7, and May 14 were collected following shutdown of the system array wells for a period of at least 60 hours.
NM - Not measured. btoc=below top of casing. msl-mean sea level.
[1] MW-3 is a flushmount well and the area was flooded at time of water level measurement.
[2] MW-11 was not sampled due to the presence of Light Non-Aqueous Phase Liquid (LNAPL) in the well.
[3] MW-13 and MW13A water level meter malfunctioned, reading not collected.
[4] MW-1A is an artesian well.
[5] 2090G was dry at time of water level measurement.
[6] RW-2091C and RW-2092C sample ports are obstructed, unable to collect water level measurement.

Table 6 - Ground Water Recovery System Extraction Measurements
FMC Baltimore, Former Agricultural Products Group

Date	Flow from Holding Tanks to Ground Water Treatment Plant			Flow from Recovery Wells to Holding Tanks		
	Daily FT-21001 Totalizer Meter Readings (Gallons)	Daily FT-21001 Totalizer Flow (Gallons / Day)	Daily FT-21001 Totalizer Flow (Gallons / Minute)	Cummulative Daily Ground Water Extraction (Gallons)	Daily Ground Water Extraction (Gallons / Day)	Average Daily Ground Water Extraction (Gallons / Minute)
5/31/2018	63,788,772	--		0	--	
6/1/2018	63,841,168	52,396	36	52,396	52,396	36
6/2/2018	63,841,168	0	0	52,396	26,198	18
6/3/2018	63,841,168	0	0	52,396	17,465	12
6/4/2018	63,943,580	102,412	71	154,808	38,702	27
6/5/2018	63,983,744	40,164	28	194,972	38,994	27
6/6/2018	64,040,684	56,940	40	251,912	41,985	29
6/7/2018	64,094,428	53,744	37	305,656	43,665	30
6/8/2018	64,150,132	55,704	39	361,360	45,170	31
6/9/2018	64,150,132	0	0	361,360	40,151	28
6/10/2018	64,150,132	0	0	361,360	36,136	25
6/11/2018	64,254,116	103,984	72	465,344	42,304	29
6/12/2018	64,310,676	56,560	39	521,904	43,492	30
6/13/2018	64,367,324	56,648	39	578,552	44,504	31
6/14/2018	64,422,776	55,452	39	634,004	45,286	31
6/15/2018	64,468,020	45,244	31	679,248	45,283	31
6/16/2018	64,468,020	0	0	679,248	42,453	29
6/17/2018	64,468,020	0	0	679,248	39,956	28
6/18/2018	64,572,036	104,016	72	783,264	43,515	30
6/19/2018	64,620,996	48,960	34	832,224	43,801	30
6/20/2018	64,668,872	47,876	33	880,100	44,005	31
6/21/2018	64,715,352	46,480	32	926,580	44,123	31
6/22/2018	64,762,804	47,452	33	974,032	44,274	31
6/23/2018	64,762,804	0	0	974,032	42,349	29
6/24/2018	64,762,804	0	0	974,032	40,585	28
6/25/2018	64,834,884	72,080	50	1,046,112	41,844	29
6/26/2018	64,880,824	45,940	32	1,092,052	42,002	29
Average Daily Flow	--	42,002	29	--	41,178	29

Notes:
Data reported 1 June through 26 June 2018.
Daily FT-21001 Totalizer Meter Readings are from the holding tank discharge.
Daily Ground Water Extraction is estimated based on aggregate flow from all wells.

Table 7 - Ground Water Recovery System Final System Configuration Parameters
FMC Baltimore, Former Agricultural Products Group Facility

Recovery Well Designation	Ground Elevation (ft msl)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Formation	Configuration Status	Well Construction Data - Elevation (ft msl)			
						Pump Intake	Set Point	High Trip Point	Low Trip Point
Shallow Wells - Stonehouse Cove									
RW-2090A	9.35	33.7	17.7-27.7	Pleistocene	Off-Line	-16.3	-10.0	-4.0	-13.0
RW-2090B	9.25	38.5	17.5-32.5	Pleistocene	Off-Line	-20.5	-12.0	-6.0	-15.0
RW-2090C	9.28	36.5	20.5-30.5	Pleistocene	Continue to Operate	-20.4	-14.0	-8.0	-17.0
RW-2090D	10.77	31.4	15.4-25.4	Pleistocene	Off-Line	-14.9	-8.0	-2.0	-11.0
RW-2090DR	7.44	40	15-35	Pleistocene	Continue to Operate	-29.6	0.5	2.2	-0.3
RW-2090E	11.32	21.6	5.6-15.6	Pleistocene	Off-Line	-9.5	-1.0	5.0	-4.0
RW-2090ER	8.30	41.55	21.55-36.55	Pleistocene	Continue to Operate	-30.3	0.5	2.2	-0.3
RW-2090E1	9.91	40	20-35	Pleistocene	Continue to Operate	-27.1	-0.1	1.6	-0.9
RW-2090F	12.47	27.1	11.1-21.1	Pleistocene	Continue to Operate	-5.1	-1.0	5.0	-2.5
RW-2090FR	10.48	40	20-35	Pleistocene	Continue to Operate	-26.5	0.3	2.0	-0.5
RW-2090G	11.02	28.7	12.7-22.7	Pleistocene	Continue to Operate	-8.5	-4.0	2.0	-5.5
RW-2090H	7.87	38.7	22.7-32.7	Pleistocene	Continue to Operate	-20.8	-10.0	-6.0	-15.0
RW-2090J	9.73	32.6	15.6-26.6	Pleistocene	Continue to Operate	-15.7	-11.0	-5.0	-12.5
RW-2090K	10.99	32	10.5-26.5	Pleistocene	Off-Line	-13.8	-3.0	3.0	-6.0
RW-2090L	11.37	32	10.5-26.5	Pleistocene	Continue to Operate	-13.1	-3.0	3.0	-6.0
RW-2090M	11.29	39	9-34	Pleistocene	Off-Line	-18.9	-4.0	2.0	-7.0
Shallow Wells - Curtis Bay									
RW-2091A	14.35	41	14.5-35.5	Pleistocene	Off-Line	-19.2	-5.0	1.0	-8.0
RW-2091A1	16.61	40	15-35	Pleistocene	Continue to Operate	-20.4	-1.8	-0.1	-2.7
RW-2091B	14.91	37.9	10.4-32.4	Pleistocene	Continue to Operate	-4.7	0.0	6.0	-2.0
RW-2091C	14.45	23	8-17	Pleistocene	Continue to Operate	-14.9	-1.0	5.0	-4.0
RW-2091D	13.11	32.9	17.4-27.4	Pleistocene	Continue to Operate	-13.0	-7.0	-1.0	-10.0
RW-2091E	11.44	36.1	8.1-30.1	Pleistocene	Continue to Operate	-14.7	-1.0	5.0	-4.0
RW-2091E1	9.64	35	10-30	Pleistocene	Continue to Operate	-22.4	-14.3	-12.7	-15.2
RW-2091F	11.39	34.1	12.6-28.6	Pleistocene	Continue to Operate	-13.2	-3.0	3.0	-6.0
Intermediate Wells									
RW-2092A	13.41	64	44-64	Patapsco	Continue to Operate	-21.1	-3.0	2.0	-6.0
RW-2092B	14.49	67.6	41.6-61.6	Patapsco	Continue to Operate	-20.1	-3.0	2.0	-6.0
RW-2092C	13.79	67.4	41.4-61.4	Patapsco	Continue to Operate	-20.8	-3.0	2.0	-6.0
RW-2092D	11.52	59.7	33.7-53.7	Patapsco	Continue to Operate	-22.7	-3.0	2.0	-6.0
RW-2092E	11.36	61.3	35.3-55.3	Patapsco	Off-Line	-23.3	-3.0	2.0	-6.0
RW-2092F (Stonehouse Cove)	6.64	63	38-58	Patapsco	Continue to Operate	-23.9	-3.0	2.0	-6.0
RW-2092G	12.33	65	40-60	Patapsco	Continue to Operate	-49.7	1.01	2.71	0.21

Notes:
Bold-italics-underline well names are new wells recently installed.
ft bgs - feet below ground surface.
ft msl - feet relative to mean sea level.

APPENDICES

APPENDIX A

HYDROCARBON INVESTIGATION REPORT

High-Resolution Light Nonaqueous Phase Liquid (LNAPL) Conceptual Site Model Assessment, FMC Baltimore Former Agricultural Products Group Facility Baltimore, MD April 2017

Project Number 3564-2017-02

Prepared in collaboration with
Environmental Resources Management (ERM)
Annapolis, MD

by

COLUMBIA Technologies
Rockville, Maryland

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COLUMBIA Technologies, LLC
ONE Research Court, Suite 450
Rockville, Maryland 20850

For more information on COLUMBIA Technologies, SmartData Solutions®, and LNAPL assessment tools and protocols visit http://www.columbiatechnologies.com or call 1-888-344-2704.

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Appendix B: Interpretation of Qualitative Direct Sensing Data

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Appendix D: LIF/UVOST® Logs

Appendix E: UVOST Response to Various Saturated Products on Wet Sand

Conversion Factors

Inch/Ounce/Pound/PSI to international System of Units

Multiply	By	To obtain
	Length	
Inch (in.)	2.54	Centimeter (cm)
Inch (in.)	25.4	Millimeter (mm)
Foot (ft.)	0.3048	Meter (m)
	Volume	
Ounce (oz.)	29.6	Milliliters (ml)
Gallon (gal)	3.8	Liters (L)
	Pressure	
Pounds per Square Inch (psi)	6.89	Kilopascals (kPa)
	Hydraulic Conductivity	
Feet per day (ft/day)	0.0003527	Centimeters per second (cm/sec)

Temperature in degrees Celsius (°C) is converted to degrees Fahrenheit (°F) as
(°F) = (1.8 x (°C) + 32

Datum

Horizontal and vertical coordinates are referenced from the World Geodetic System 1984 [EPSG:4326].

Supplemental Information

Electrical conductivity (EC) is provided in millisiemens per meter (mS/meter).

Concentrations of chemical constituents in water are provided in either milligrams per liter (mg/L) or micrograms per liter (μg/L).

Concentrations of chemical constituents in soil are provided in either milligrams per kilogram (mg/kg) or micrograms per kilogram (μg/kg).

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High-Resolution Light Nonaqueous Phase Liquid (LNAPL) Conceptual Site Model Assessment, FMC Baltimore
Former Agricultural Products Group Facility
April 2017

Summary

COLUMBIA Technologies, LLC, in collaboration with **Environmental Resources Management (ERM)** conducted a high-resolution assessment of the FMC Baltimore, Former Agricultural Products Group facility site, located at 1701 East Patapsco Avenue, Baltimore, MD (the Site) during the period of April 04 to 05, 2017.

The objective of this assessment was to delineate the presence of light non-aqueous phase liquid (LNAPL) near recovery well 2090E and to characterize the nature and extent of LNAPL, if present. The results of this assessment will serve to support the development of an effective strategy to monetize the cost of long term management of the residual LNAPL and support groundwater protection at the Site.

To accomplish this objective, a High-Resolution Site Characterization (HRSC) was conducted, and an updated LNAPL Conceptual Site Model (LCSM) was developed.

The updated LCSM presented in this report provides a better understanding for:

(1) evaluating LNAPL risks;
(2) setting achievable remedial action goals, and
(3) selecting or modifying effective remedial action technologies.

This HRSC was conducted in accordance with the guidelines of the Interstate Training and Regulatory Council (ITRC), *Evaluating LNAPL Remedial Technologies for Achieving Project Goals (Dec 2009)*.

The updated LCSM presented herein is based on high-resolution direct sensing measurements conducted by **COLUMBIA Technologies**.

The direct sensing data are comprised of Laser Induced Fluorescence/Ultraviolet Optical Screening Tool (LIF/UVOST®) measurements.

Direct sensing logs are presented in **Appendix D**.

Twenty-four (24) LIF/UVOST® borings were advanced at the Site at the locations shown in **Figures 1** and **2**.

A weak but distinctive response was measured by LIF/UVOST® in five (5) of the twenty-four (24) LIF borings advanced for this assessment. The LIF-UVOST® signature and associated waveforms are characteristic of Heavy Fuel Oil (HFO), potentially Bunker C (No. 6 fuel oil). Low LIF/UVOST® response is typical of HFO.

LIF/UVOST® response was measured LNAPL in the subsurface within a generally contiguous area approximately 100-ft long (N-S) by 60-ft wide (E-W) near recovery well 2090E.
LIF/UVOST® measurements indicate that the residual LNAPL is mostly within an 11.4-ft thick interval extending from El 7.1 and -4.3 (2.3 to 13.8 ft bgs).

The horizontal extent of LNAPL is well defined on the north and east. The southern extent of residual LNAPL is unclear. On the west, Stonehouse Cove bounds the Site. The extent of LNAPL adjacent to this water body is undefined.

Introduction

Background and Current Conceptual Site Model

FMC's Agricultural Products Group formerly used this Baltimore Site. Impacts to soil and groundwater, including petroleum hydrocarbons (PHCs) at concentrations indicative of the potential presence of nonaqueous phase liquids, NAPLs, have been documented by previous Site assessments.

Project Objectives

A high-resolution direct-sensing survey was proposed by **ERM** to determine the presence and extent of LNAPL near well RW-2090E. The results of this assessment will be used to determine the depth of a replacement for well RW-2090, to evaluate the surrounding monitoring well network, and to support the optimization of a corrective action strategy that will monetize the long-term cost of LNAPL management and protection of groundwater at the Site.

The information from this high-resolution site characterization employs "scale-appropriate" survey density to define LNAPL distribution, thereby enabling evaluation of potential risks and remedial alternatives with greater certainty. This, in turn, provides the basis to optimize management strategies and monetize the long-term management of potential risks resulting from LNAPL at this Site.

Methods, Assumptions, and Procedures

This High-Resolution Site Characterization (HRSC) was conducted in accordance with the guidelines of the Interstate Training and Regulatory Council (ITRC), *Evaluating LNAPL Remedial Technologies for Achieving Project Goals (Dec 2009)*.

Planning for this High-resolution Site Characterization (HRSC) involved the review of available site documentation for developing an understanding of the existing conceptual Site model (CSM) and indications of likely LNAPL impacts.

Laser-induced fluorescence (LIF/ UVOST®),) was selected to address the defined objectives of this assessment. Utilizing Laser Induced Fluorescence (LIF/UVOST®) the vertical distribution, type, and relative concentrations of LNAPL in the subsurface can be discerned at the centimeter scale.

The LIF/UVOST® system is designed specifically for detecting light to mid-weight fuels and oils containing PAHs. LIF/UVOST® readily detects diesel fuel, kerosene, motor oils, cutting fluids, hydraulic fluid, light crude oils, and fuel oils. Response to highly weathered gasoline is low to zero. LIF/UVOST® can also detect heavier petroleum products as well such as creosote, coal tars, and #6 bunker C fuel oil, however, LIF/UVOST® response to these heavier fuels is often inconsistent.

LIF/UVOST® does not detect dissolved phase PHCs.

LIF borings were advanced to depths ranging from 16.8 to 35.3 ft. This depth interval was specified to correspond with the base of the existing recovery well RW-2090E (21.6 ft bgs) and the proposed depth of the replacement well (35 ft).

Initial LIF boring locations were advanced near well RW-2090E, subsequently progressing outward in four directions based on the perceived groundwater gradient. The technical team reviewed the high-resolution survey results daily using the *SmartData Solutions*® real-time decision support system to iteratively refine the work plan, systematically selecting additional LIF survey locations to define the horizontal and vertical extent of LNAPL in the target area, ensuring that survey objectives were met and completed prior to demobilization from the Site.

Results and Discussion

LNAPL Distribution

A weak but distinctive response was measured by LIF/UVOST® in five (5) of the twenty-four (24) LIF borings advanced for this assessment (L01/L01-Deep, L05, L12, L13, and L17). The LIF/UVOST® waveform and response signature recorded at all survey locations is typical of heavy fuel oil such as no. 6 fuel oil, commonly referred to as Bunker C. LIF/UVOST® response to Heavy Fuel Oil (HFO) is commonly very low. All LNAPL measured by this LIF survey was indicative of HFO.

HFOs, including Bunker C, are complex mixtures, consisting of blends of the residues and distillates derived from various refinery processes. They are typically dense, viscous, and persistent in the environment, and generally consist of aromatic, aliphatic and naphthenic hydrocarbons, with carbon numbers that may range from C7 to greater than C50.

Considering the characteristically low LIF/UVOST® response to HFOs, several data points with very low-level response (4.14 %RE to 4.77 %RE), but displaying the characteristic waveform were considered when evaluating the LNAPL extent (L10, L14, and L19). It is noteworthy that inclusion of these data points did not change the estimated extent of LNAPL at the Site, but served to corroborate the overall interpolation.

One can infer from the data the approximate areal extent of the area impacted by LNAPL near recovery well RW-2090E. The areal extent of the residual LNAPL zone presented on this map was derived through interpolation using the maximum LIF/UVOST® response measured in each LIF boring for this assessment. These figures also provide a comparison of the magnitude of maximum LIF/UVOST® response measured at each survey location.

The horizontal extent of LNAPL is well defined on the north and east by these data. The southern extent of residual LNAPL is unclear. On the west, Stonehouse Cove bounds the Site. The extent of LNAPL adjacent to this water body is undefined.

Figure 3 illustrates the vertical extent of LNAPL measured by LIF/UVOST® at the five (5) survey locations that exhibited the highest instrument response. These measurements indicate that residual LNAPL in the study area is predominantly between El 7.1 and -4.3 (2.3 to 13.8 ft bgs). Lower-level instrument response at other survey locations (L10, L14 and L19) corroborates this interval.

Individual logs of LIF/UVOST® soundings are presented in **Appendix D**.

Quality Control

Each direct sensing instrument was operated in accordance with the manufacturer's standard operating procedures.

Performance testing was performed prior to and following each survey sounding. These procedures are outlined in **Appendix C.**

A thorough QC review of the logs revealed no anomalies.

Conclusions

1. This high-resolution assessment of the FMC Baltimore Site defined a zone of residual LNAPL approximately 100-ft long (N-S) by 60-ft wide (E-W). LIF/UVOST® measurements indicate that the residual LNAPL is mostly within an 11.4-ft thick interval extending from El 7.1 and -4.3 (2.3 to 13.8 ft bgs).
2. The LIF-UVOST® signature and associated waveforms are characteristic of Heavy Fuel Oil (HFO), potentially Bunker C (No. 6 fuel oil).

References

American Petroleum Institute - Petroleum HPV Testing Group. May 23, 2003; December 7, 2012 update. *Robust Summary of Information on Heavy Fuel Oil Category*.

Interstate Training and Regulatory Council (ITRC). 2009. *Evaluating LNAPL Remedial Technologies for Achieving Project Goals*.

Interstate Training and Regulatory Council (ITRC). January 2017. *Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management.* Petroleum Vapor Intrusion (PVI) Technical and Regulatory Guidance Web-based Document (PVI-1).

Potter, Thomas L., and Kathleen E. Simmons. 1998. *Composition of Petroleum Mixtures. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2.* Amherst Scientific Publishers, Amherst, Massachusetts.

APPENDIX A - Direct Sensing Equipment Description

LIF/UVOST® Equipment Description

The LIF system utilized for this investigation is the latest generation UVOST® system developed by Dakota Technologies, Inc. (DTI). The LIF-UVOST® system uses a high-energy laser to produce an ultraviolet light source for the detection of polycyclic aromatic hydrocarbons (PAHs).

The LIF-UVOST® system employs an excitation beam of light from a xenon chloride laser at 308 nanometers (nm), pulsed at 50 megahertz. Any residual phase PAHs present in the soil matrix will absorb this photon energy in the form of fluorescence.

This fluorescence is returned to the optical detection system via a second silica fiber optic line, measured, and recorded in real time across four 50nm wavelength bins centered at 350, 400, 450, and 500 nm.

Individual LIF-UVOST® logs consist of a primary graph of total fluorescence as a %RE test standard versus depth, an information box, and up to five waveform callouts. These callouts present the fluorescence intensity of each of the monitored wavelengths on the Y-axis [in microvolts (uV)]. The four peaks are due to the fluorescence at the four monitored wavelengths called channels. Each channel is assigned a color. Various non-aqueous phase liquids will have a unique waveform signature based on the relative amplitude of the four channels and/or the broadening of one or more of the channels.

The aforementioned wavelengths represent a common range of fluorescence associated with PAHs. Typically, the lighter fuels (jet fuel and gasoline) emit fluorescence at the shorter wavelengths – 350 and 400 nm, while heavier, less distilled compounds such as bunker fuel or diesel fuel emit fluorescence at the longer wavelengths – 450 nm and 500 nm.

LIF/UVOST® screening is performed by pushing/hammering a shock protected optical cavity (SPOC) into the soil at the target rate of two centimeters per second (0.8 inches per second). As the SPOC is advanced, the total monitored fluorescence, as well as the intensity and duration of the fluorescence at each of the four monitored wavelengths, are recorded and displayed in real-time at one-second intervals as a function of depth.

LIF/UVOST® system data is presented as a percentage of the normalized % Reference Emitter (RE) performance standard. This standard consists of a blend of Non-Aqueous Phase Liquid (NAPL) and produces a consistent fluorescence response over the four wavelengths monitored by the LIF/UVOST® system. Collected data is then presented as the %RE. Using the same RE at each location and site allows normalization of data collected over several locations, sites, or screening events. The RE standard is provided by the equipment manufacturer and is the same for all LIF/UVOST® systems currently in operation.

Any fluorescence response is normally indicative of residual phase petroleum hydrocarbons, though some naturally occurring materials such as limestone will also fluoresce to a lesser and more monochromatic degree.

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APPENDIX B – Interpretation of Qualitative Direct Sensing Data General LIF/UVOST® Log Interpretation

There are three primary characteristics of fluorescence that are considered when interpreting LIF/UVOST® data. These characteristics are:

1. Fluorescence intensity - how brightly does the compound fluoresce,

2. Wavelength - what color does the compound fluoresce at, and

3. Duration - how long does the compound fluoresce at each monitored wavelength

Individual LIF/UVOST® logs consist of a primary graph of total fluorescence versus depth, an information box and up to five waveform "callouts". In the primary fluorescence graph, depth is plotted on the Y-axis and the combined total fluorescence intensity of the four monitored wavelengths is plotted on the X-axis. Total fluorescence intensity is presented as a percentage of the RE standard. Given that various PAHs fluoresce at differing intensities, there are several compounds that fluoresce brighter than the RE standard; therefore, the total %RE can exceed 100. Total fluorescence intensity is typically proportional to concentration and responds linearly as concentration increases.

While the magnitude of response of a LIF system may be indicative of the amount of contamination present, the system response should be considered only qualitative and not quantitative. The depth of the response is highly accurate and may be relied upon to guide additional data gathering such as soil and/or groundwater sampling. Furthermore, the depth of the response in one boring location does provide a reliable indicator of a potential source(s) of contamination, particularly when compared to results from adjacent boring locations.

Waveform callouts are presented along the left-hand side of the primary graph. These callouts present the fluoresce intensity of each of the monitored wavelengths on the Y-axis [in microvolts (μV)] and the duration of fluorescence of each wavelength on the X-axis. No scale is given along the X-axis, however; it is a consistent 320 nanoseconds wide. The four peaks are due to the fluorescence at the four monitored wavelengths called channels. Each channel is assigned a color. Various NAPLs will have a unique waveform signature based on the relative amplitude of the four channels and/or the broadening of one or more of the channels. Callouts are selected by the operator and typically correspond to peaks on the primary graph.

The fill color of the response on the primary graph is based on the relative contribution of each of the four channels' area versus the total waveform area. This allows the viewer to discern different substances at different each depth interval based on the fill color.

See **Appendix G**: LIF/UVOST® Response to Various Saturated Products on Wet Sand for the expected wavelength signature for common compounds.

Interpreting LIF/UVOST® and Comparison to Laboratory Analyses

Generalized correlation between LIF/UVOST® and laboratory analytical results can be inferred, but cannot be viewed as a linear comparison. LIF/UVOST® response and laboratory results are collected, analyzed and reported in different units and by different procedures, so correlation is not an exact one-to-one comparison. The LIF/UVOST® uses a process whereas a 2D soil surface is exposed to excitation light, and any fluorescent light emitted is analyzed at the ground surface. Soil and groundwater results involve the collection of a soil core, extraction of sub-sample at the surface, and then transporting them to a laboratory for extraction and analysis. These processes are different by definition.

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APPENDIX C – Quality Control Procedures

LIF/UVOST® System Performance Test

As a quality control check, the LIF/UVOST® system response is evaluated prior to and upon completion of each LIF/UVOST® screening location. This evaluation is completed using a RE that consists of a blend of NAPL and produces a consistent fluorescence response over the four wavelengths monitored by the LIF/UVOST® system. Collected data is then presented as a percentage of the RE. Using the same RE at each location and site, allows normalization of data collected over several locations, sites, or screening events. The RE standard is provided by DTI, and is the same for all LIF/UVOST® systems currently in operation.

In addition to obtaining a baseline RE for each location, the background reading of the LIF/UVOST® system is electronically recorded prior to insertion into the soil. This background reading is required to be less than 0.5% of RE prior to the start of any testing. The background during tool advancement typically stays at or below the surface background reading – giving confidence that any increases in fluorescence are "true" readings and not fluctuations or variations in background.

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APPENDIX D – LIF-UVOST® Results

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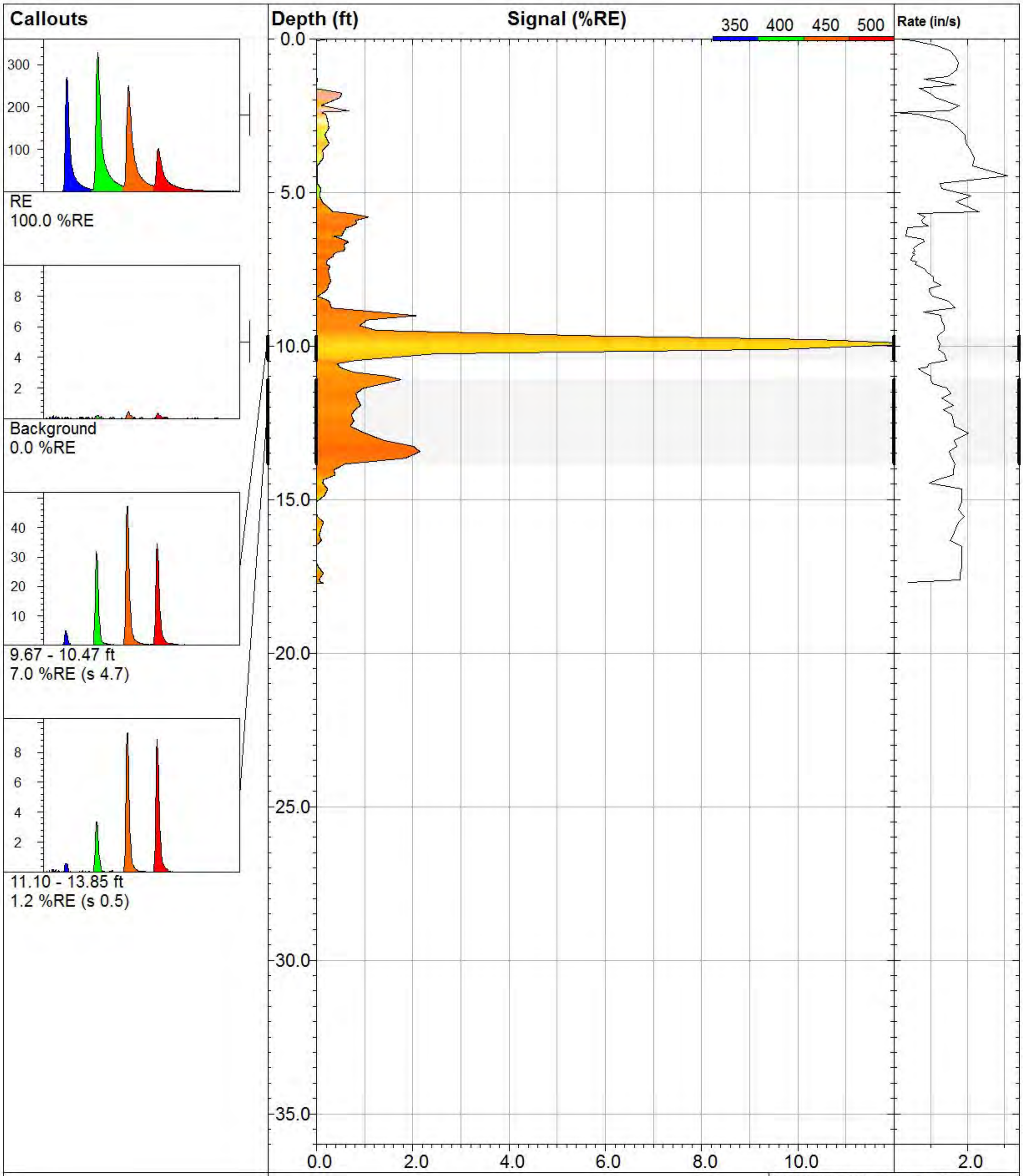
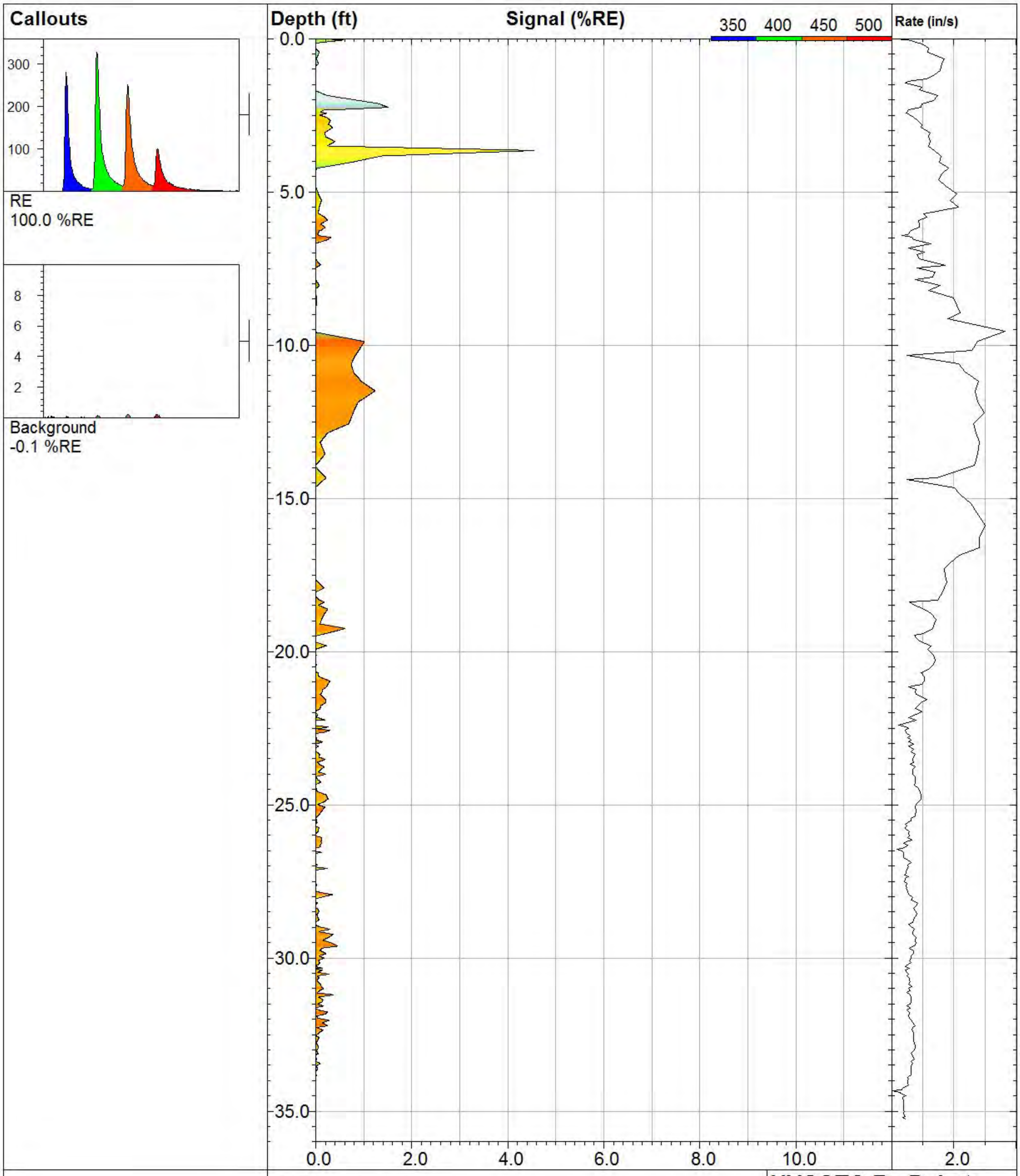


COLUMBIA TECHNOLOGIES

L01

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **17.72 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **12.6 %RE @ 9.93 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 09:11 EDT**

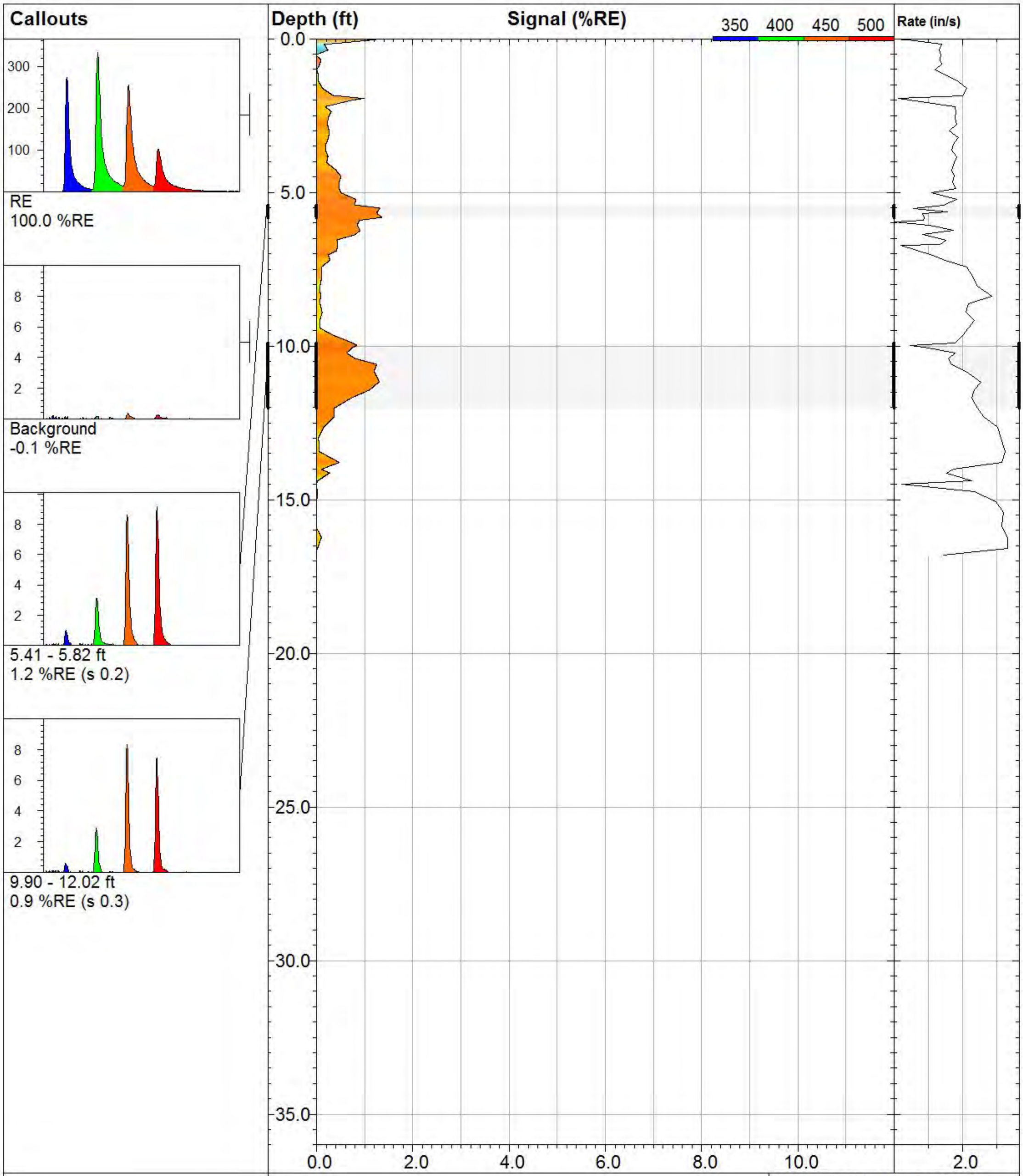


COLUMBIA TECHNOLOGIES

L01-Deep

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.28 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **4.6 %RE @ 3.65 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 09:23 EDT**

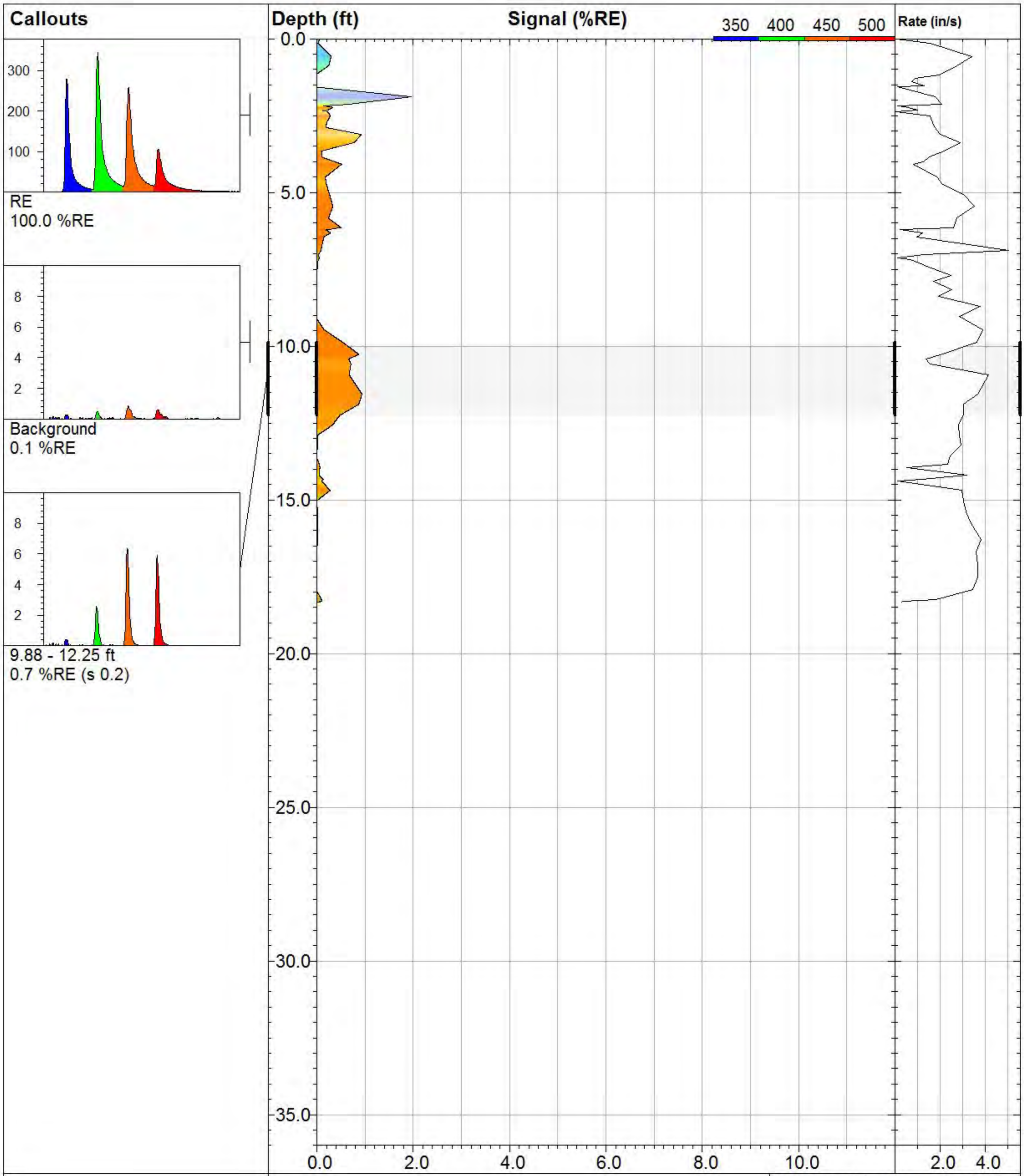


COLUMBIA TECHNOLOGIES

L02

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **16.82 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.4 %RE @ 5.82 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 09:52 EDT**



COLUMBIA TECHNOLOGIES

L03

UVOST® By Dakota
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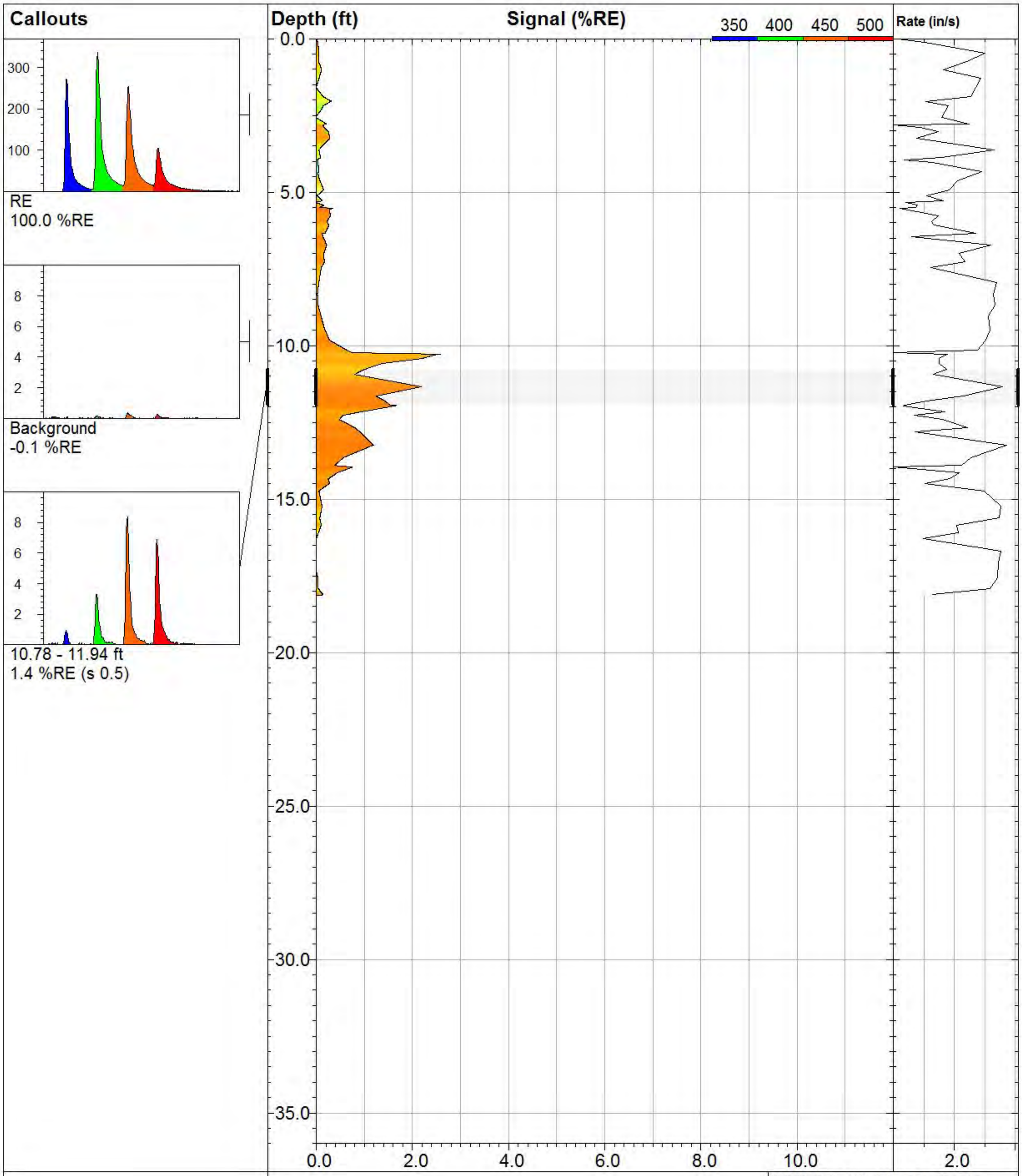
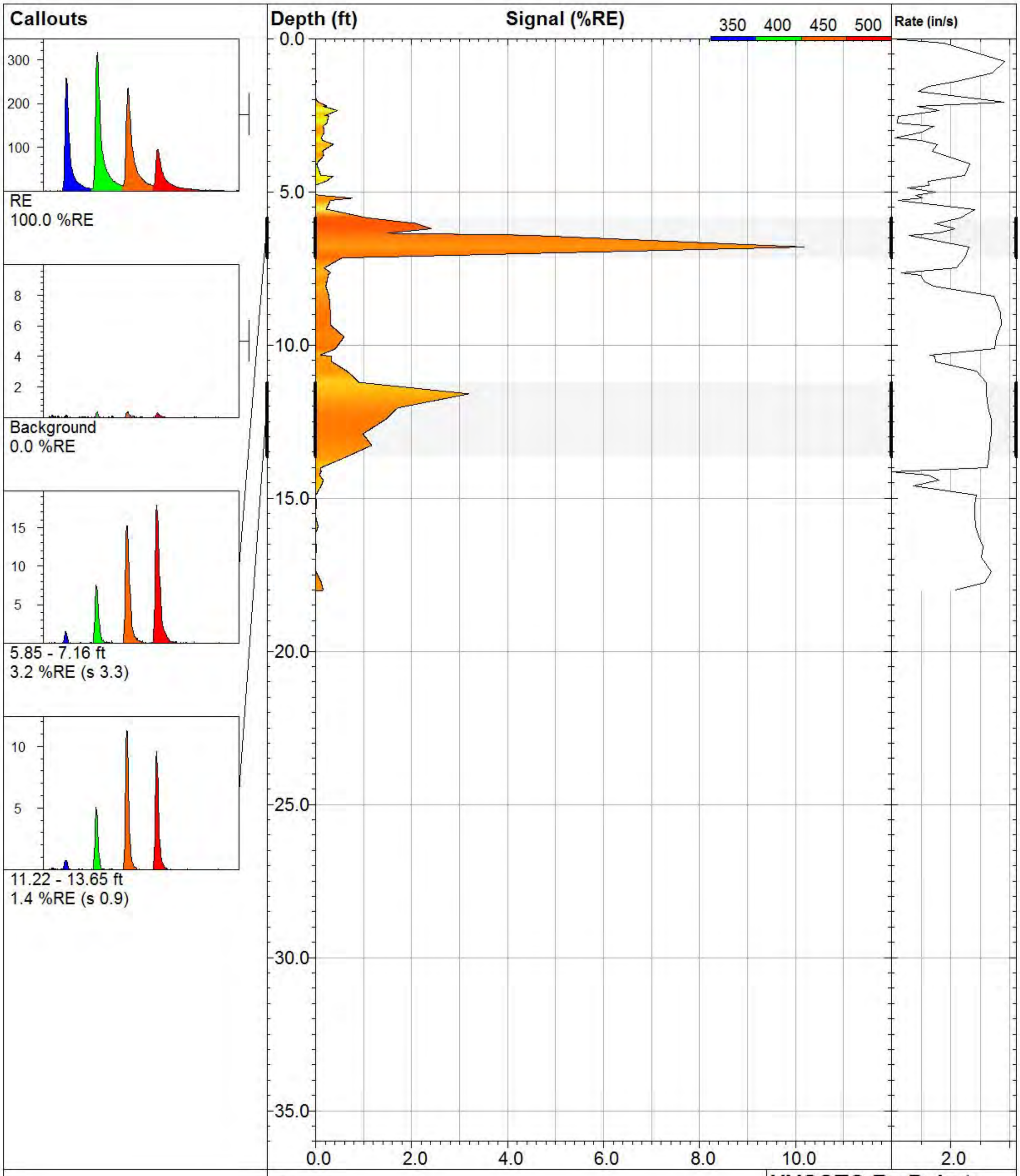
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.33 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **2.0 %RE @ 1.89 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 10:13 EDT**



COLUMBIA TECHNOLOGIES	**L04**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.13 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **2.6 %RE @ 10.28 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 10:40 EDT**



COLUMBIA TECHNOLOGIES

L05

UVOST® By Dakota
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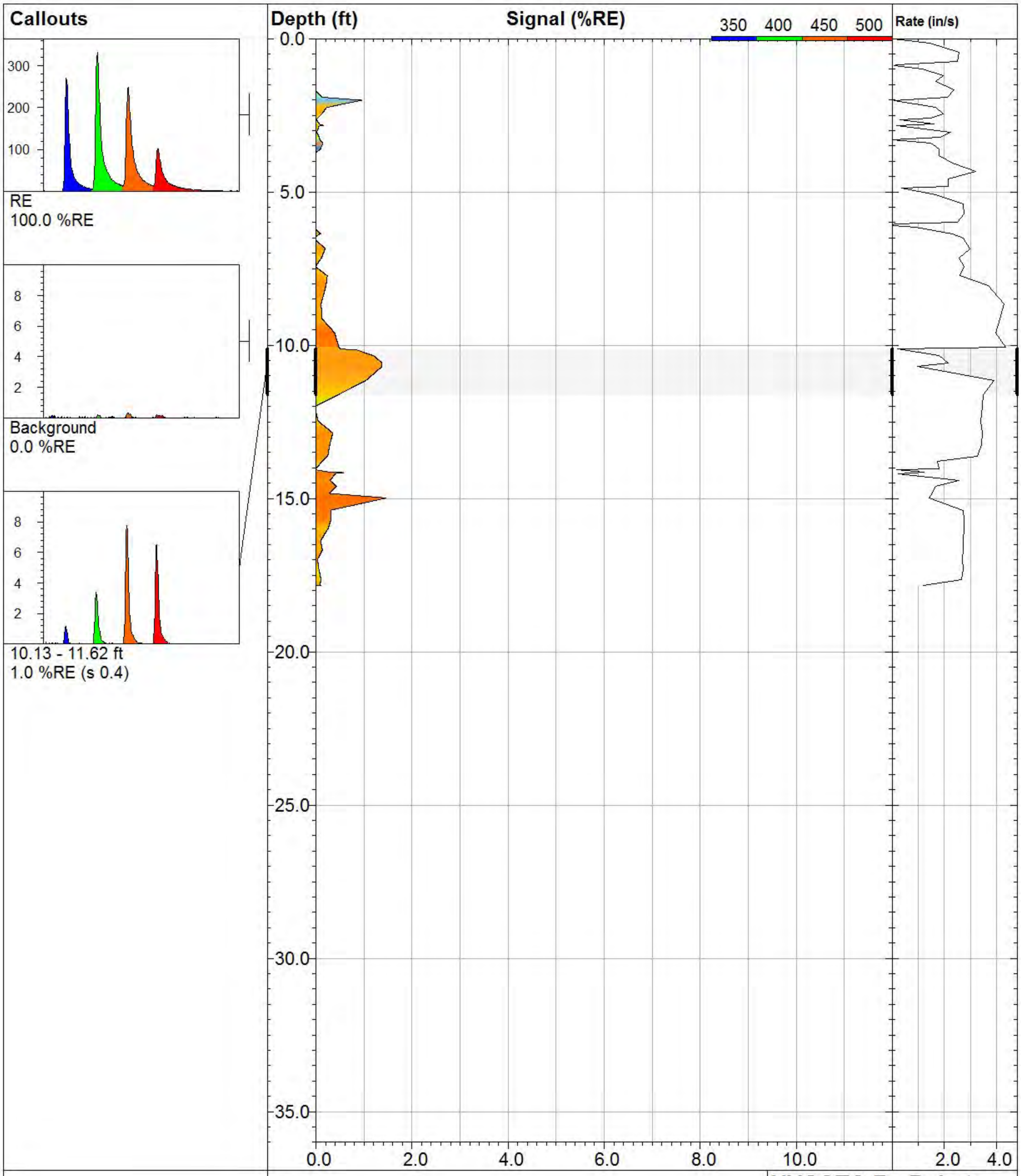
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.02 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **10.2 %RE @ 6.81 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 11:19 EDT**

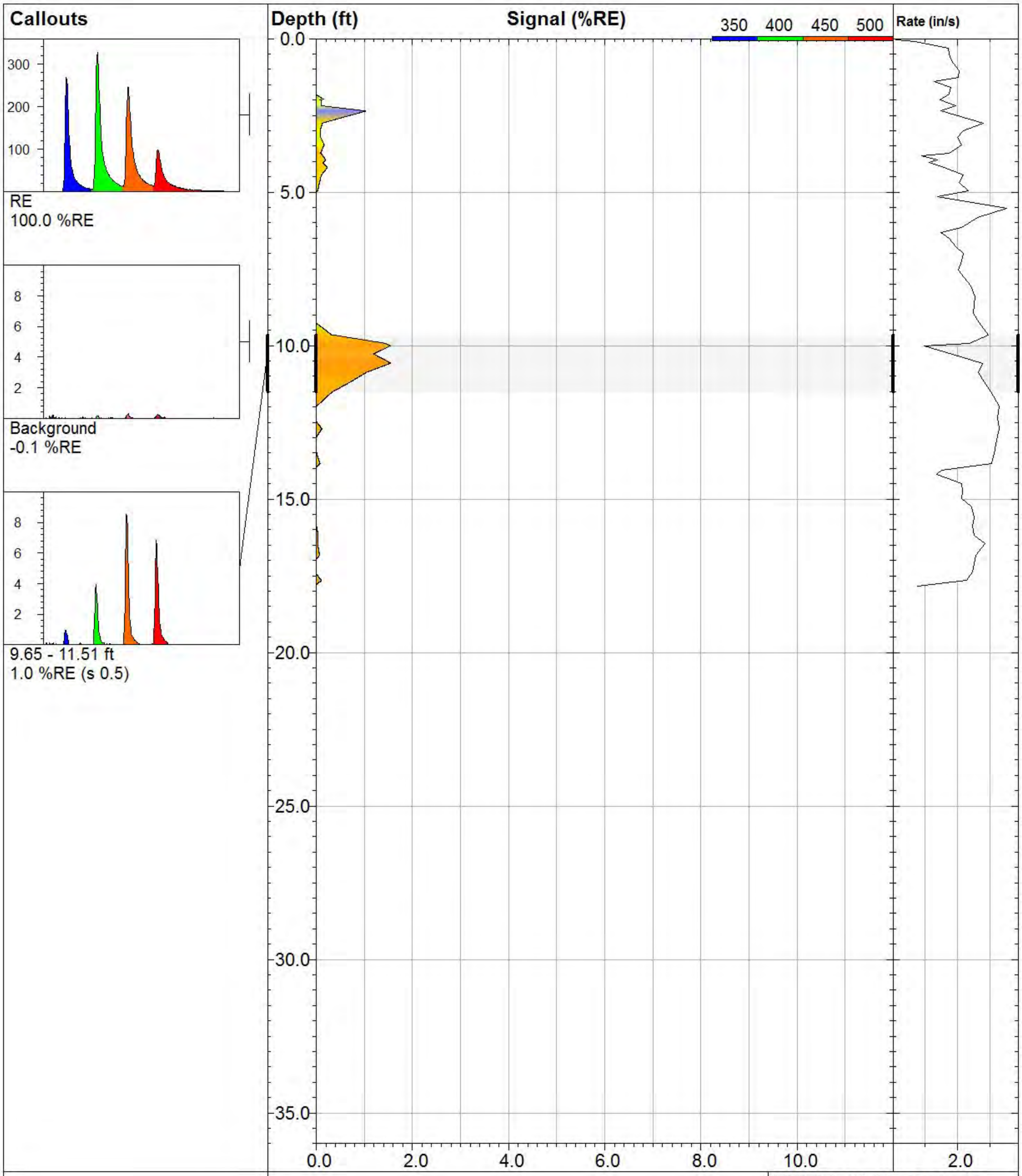


COLUMBIA TECHNOLOGIES

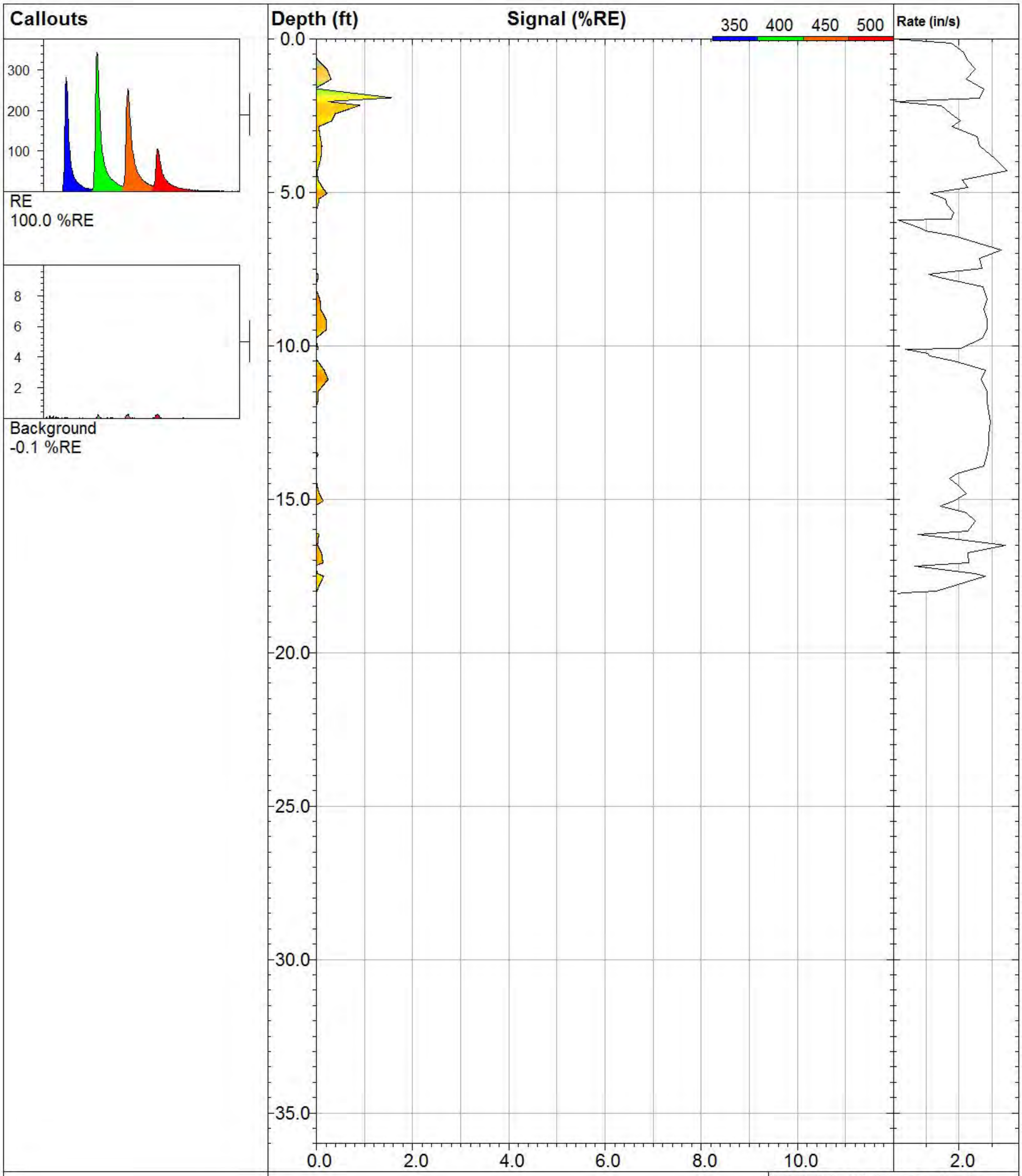
L06

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **17.84 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.5 %RE @ 14.98 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 11:41 EDT**



COLUMBIA TECHNOLOGIES	**L07**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **17.83 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.5 %RE @ 10.57 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 12:45 EDT**



L08

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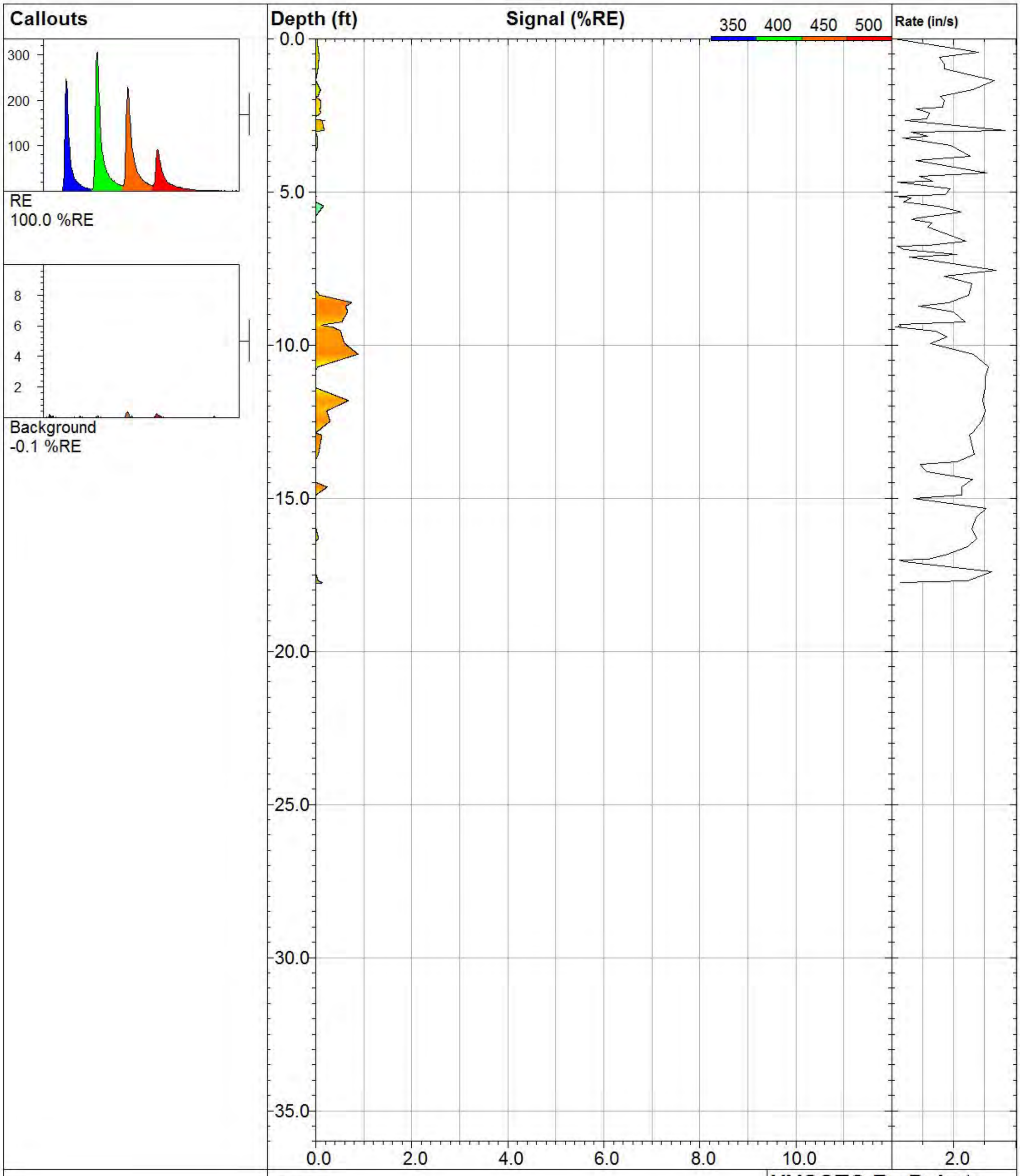
COLUMBIA TECHNOLOGIES

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.08 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.6 %RE @ 1.93 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 13:09 EDT**



COLUMBIA TECHNOLOGIES

L09

UVOST® By Dakota
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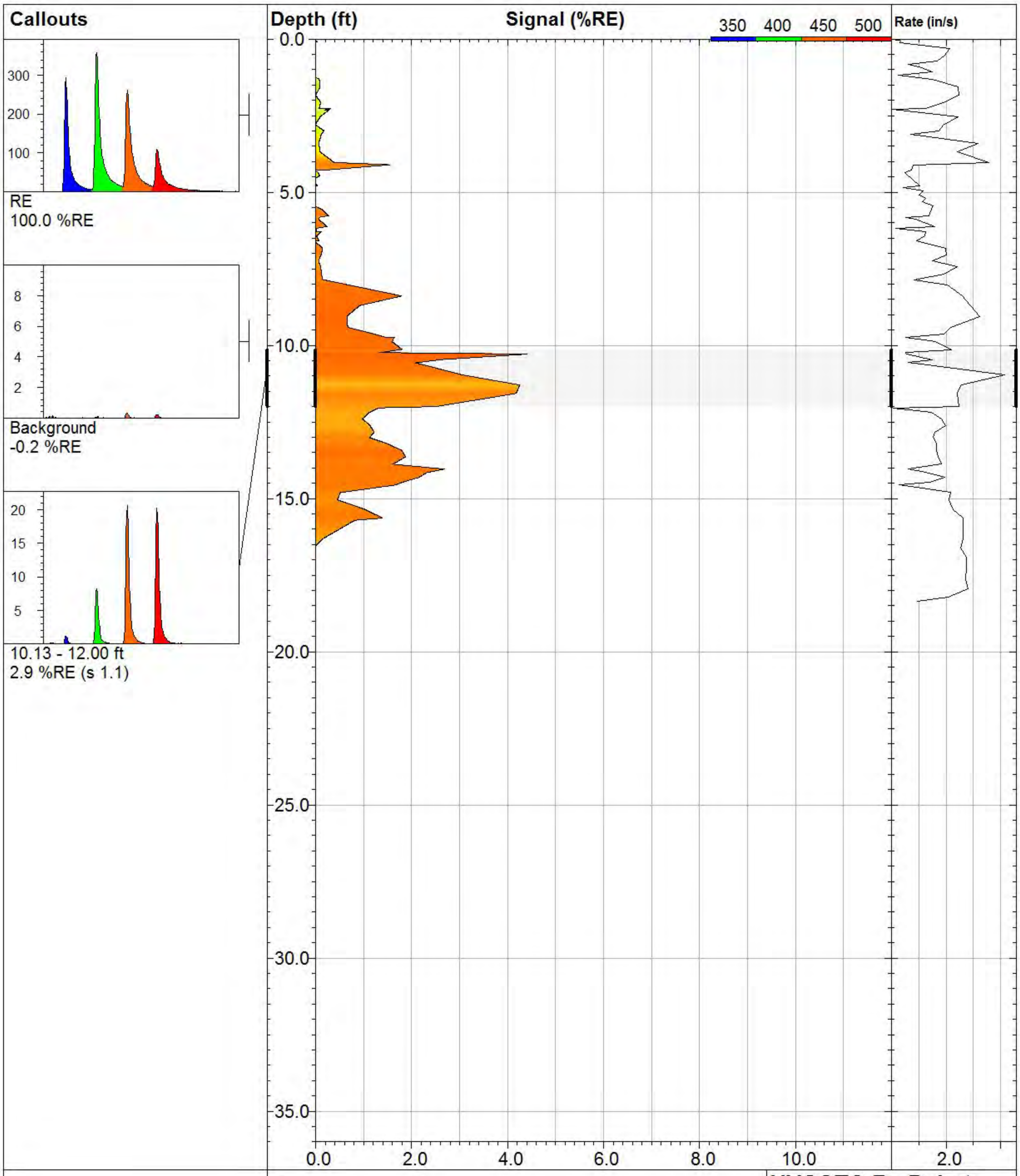
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **17.78 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **0.9 %RE @ 10.30 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 13:32 EDT**

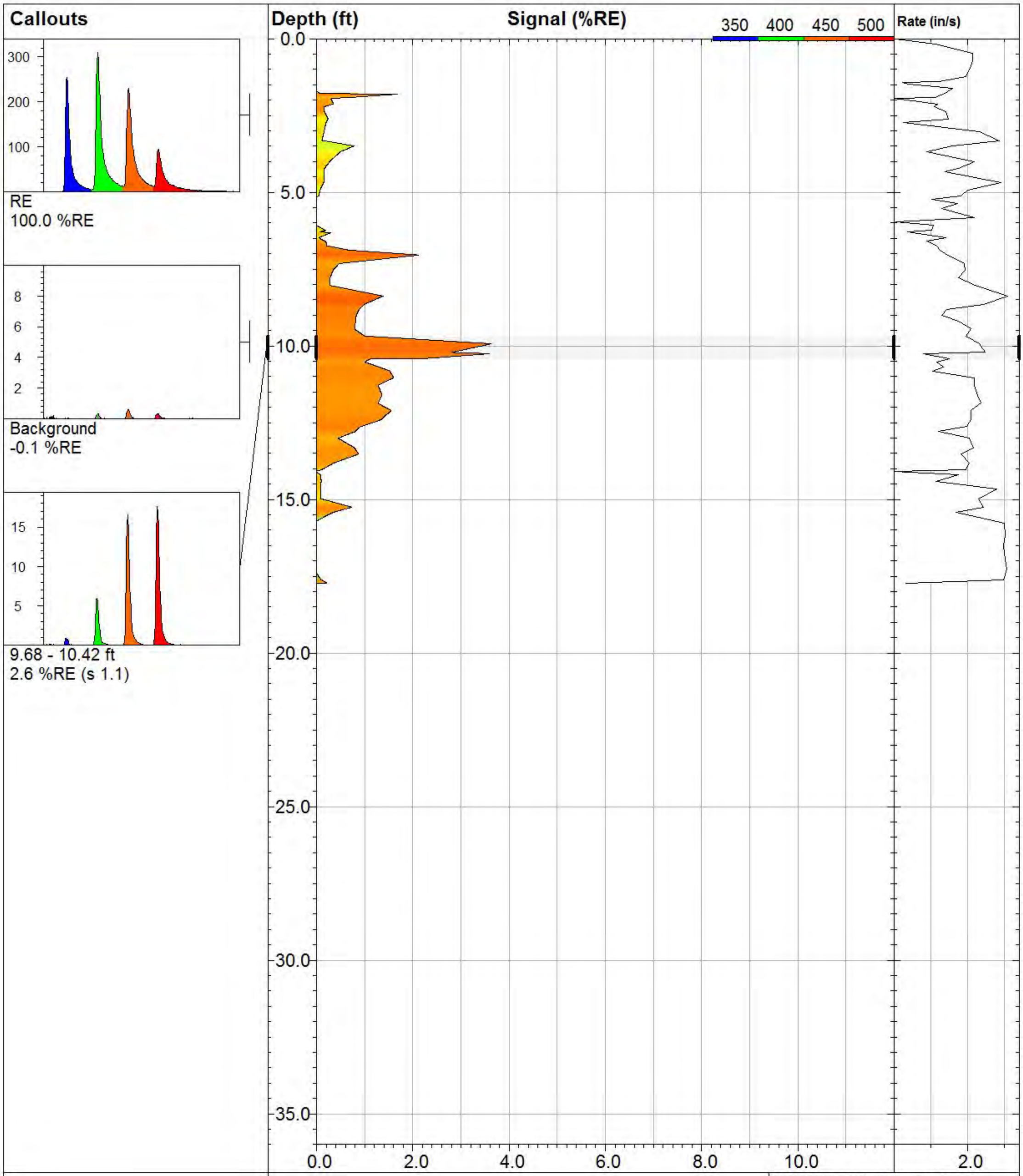


COLUMBIA TECHNOLOGIES

L10

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.35 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **4.4 %RE @ 10.28 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 13:59 EDT**

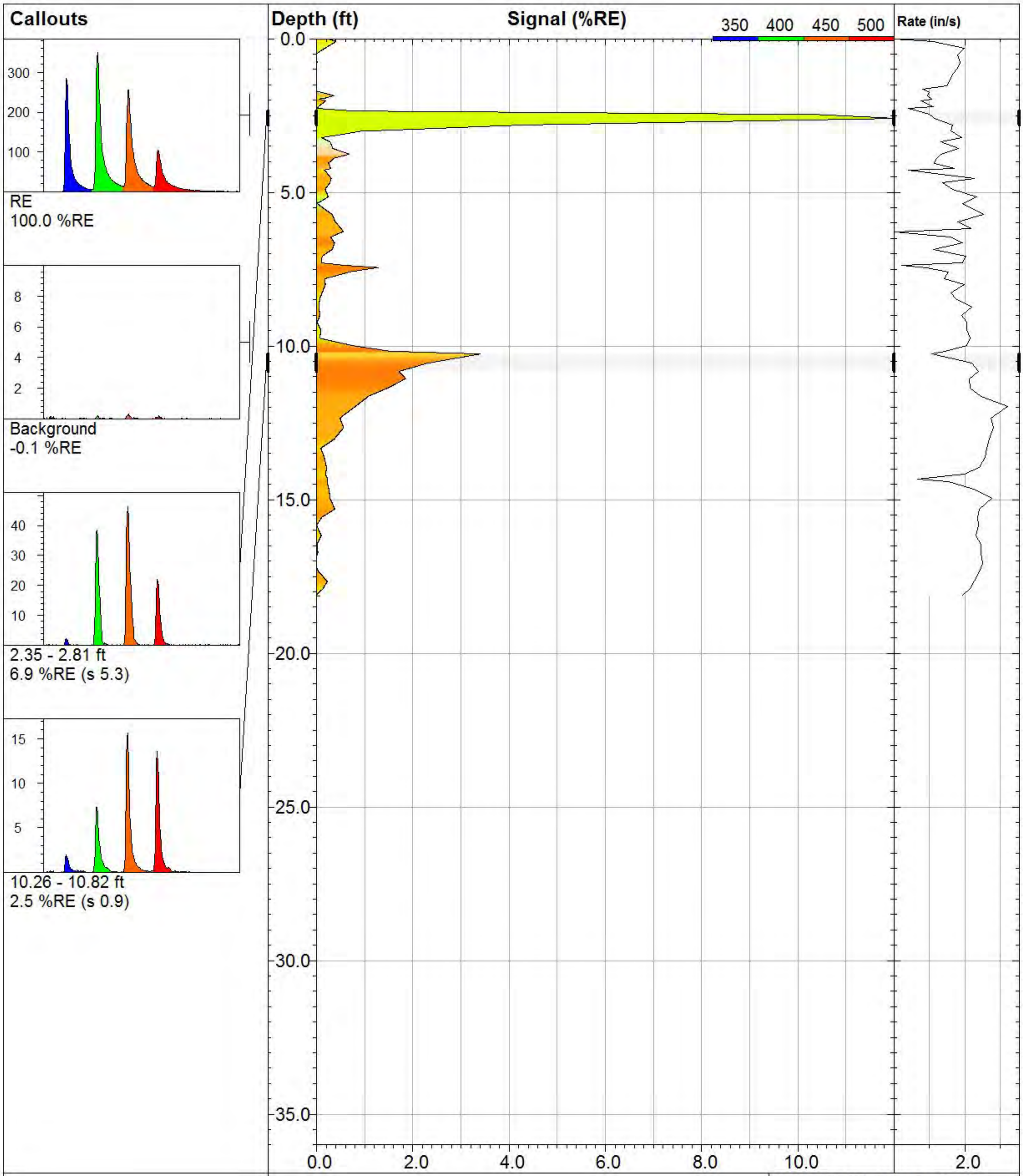


COLUMBIA TECHNOLOGIES

L11

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **17.72 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **3.6 %RE @ 9.93 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 14:24 EDT**

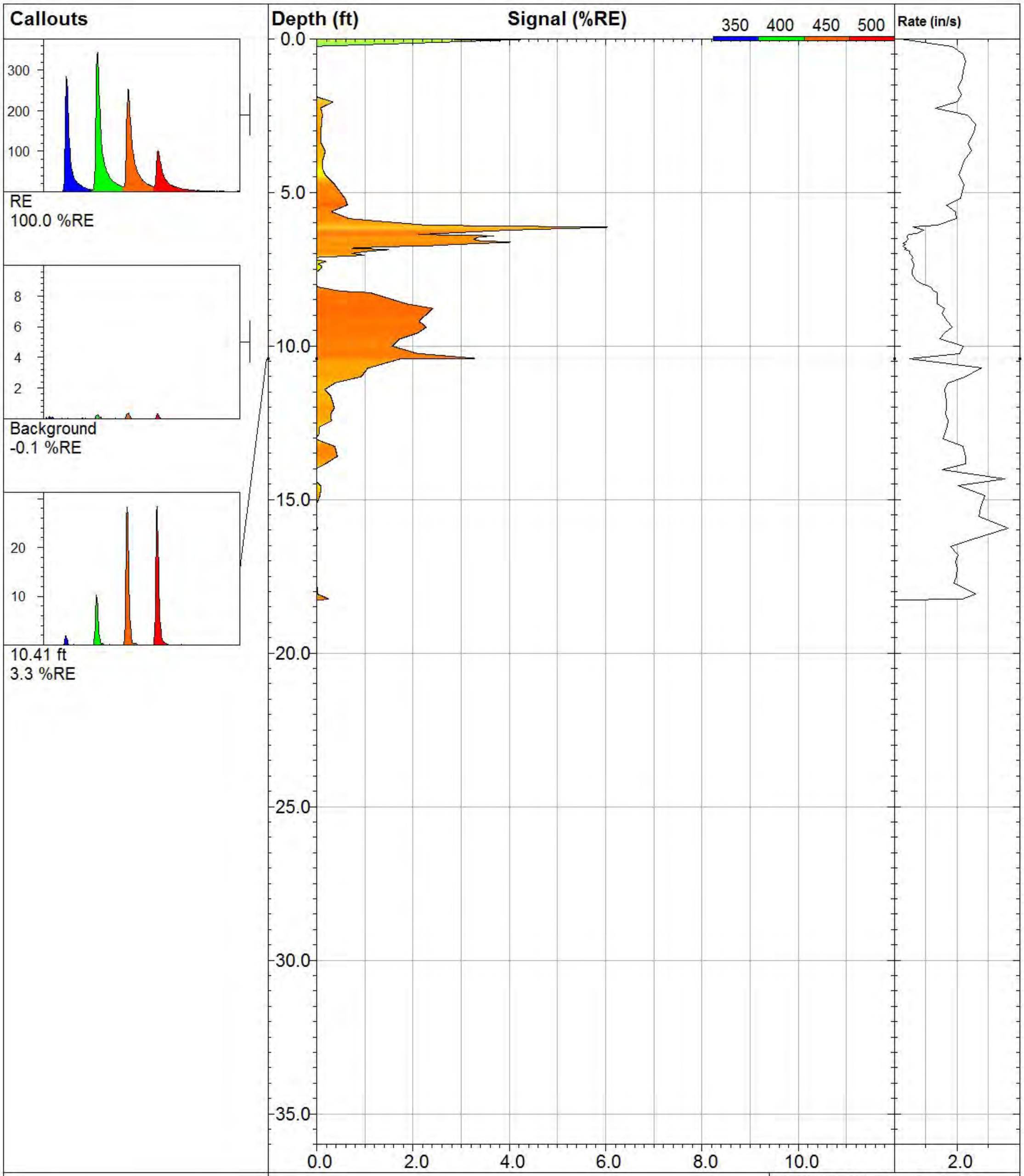


COLUMBIA TECHNOLOGIES

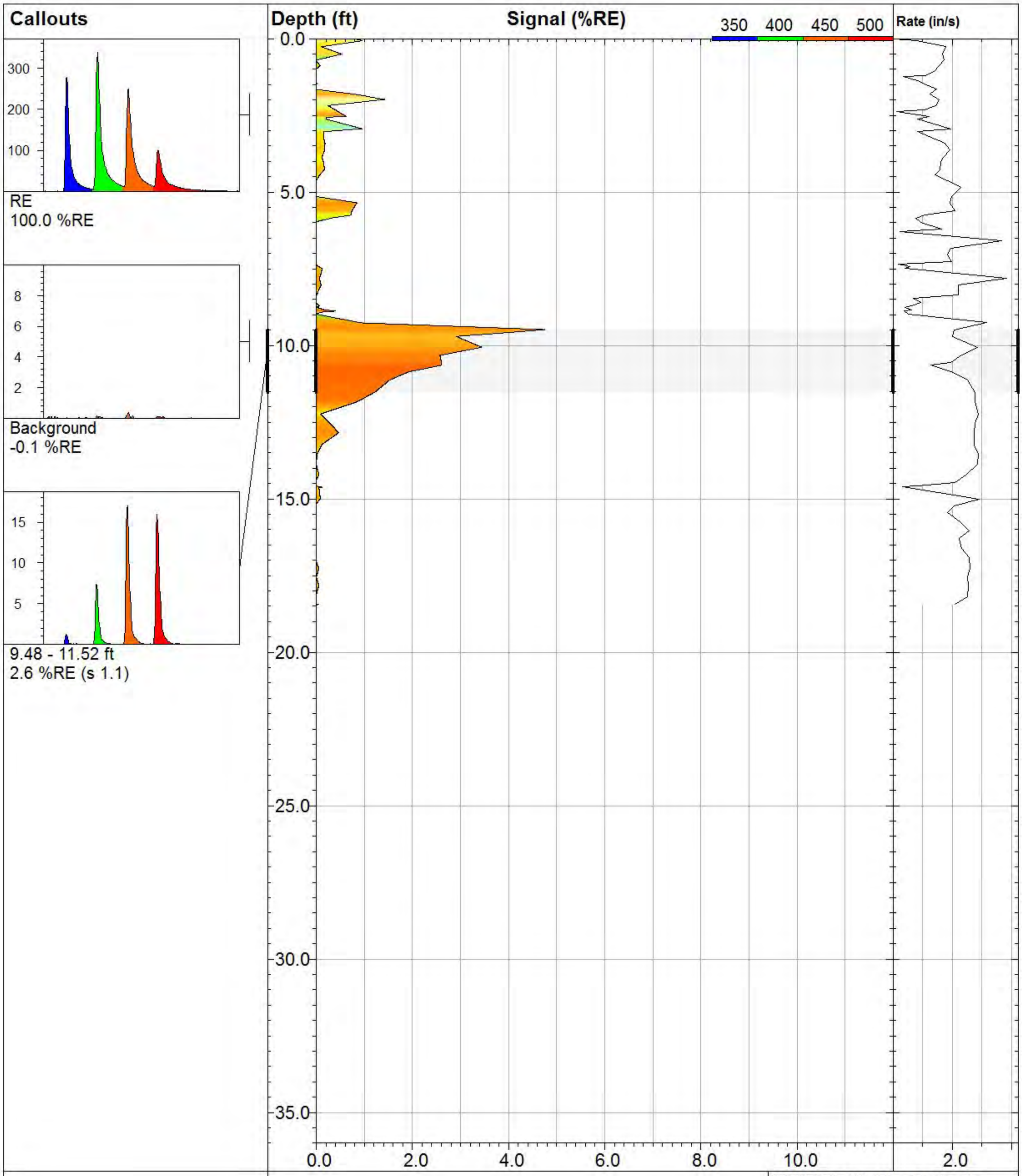
L12

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.14 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **12.0 %RE @ 2.59 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 14:56 EDT**



COLUMBIA TECHNOLOGIES	**L13**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.26 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **6.1 %RE @ 6.14 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 15:23 EDT**



COLUMBIA TECHNOLOGIES

L14

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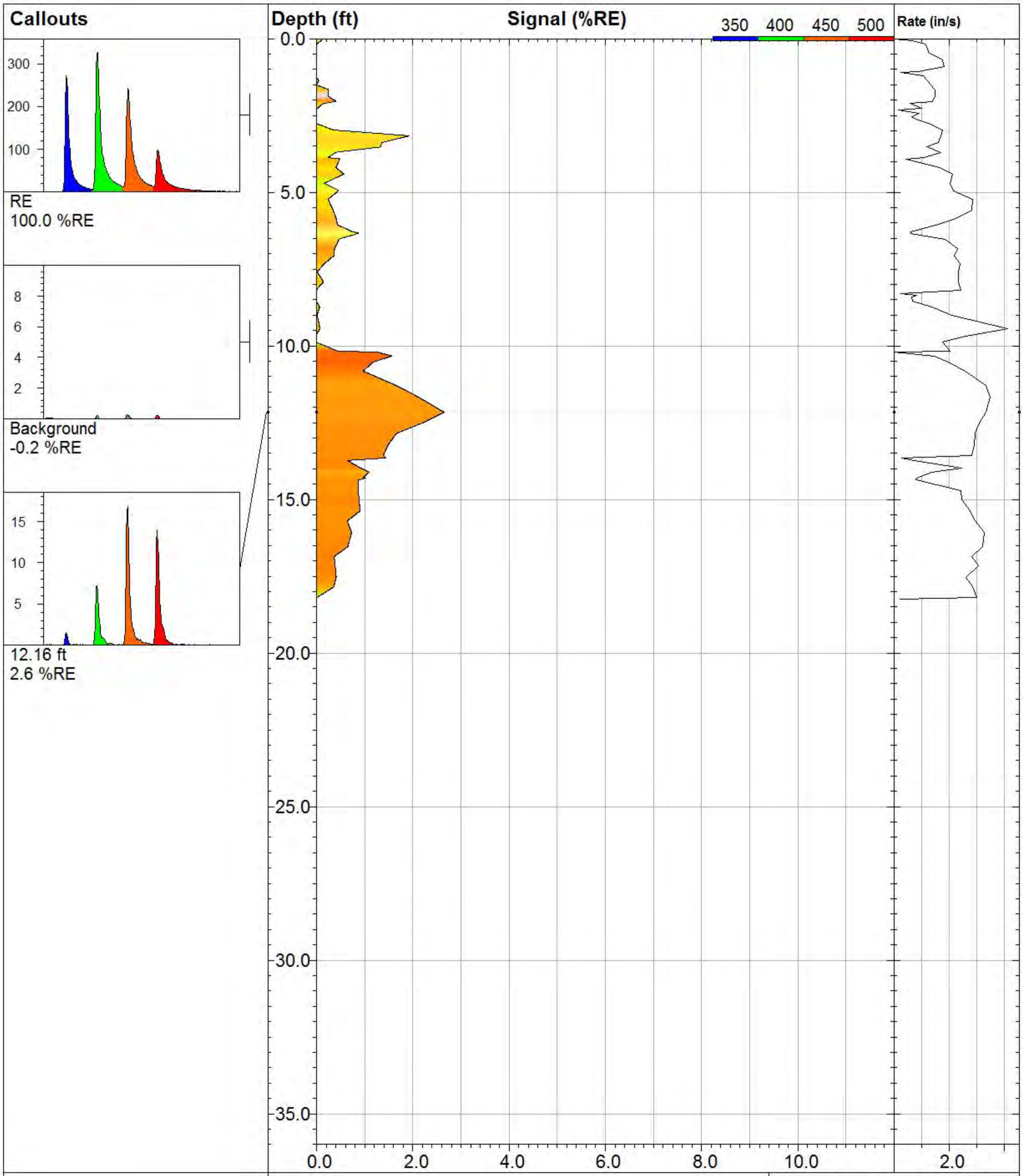
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.45 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **4.8 %RE @ 9.48 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 15:46 EDT**

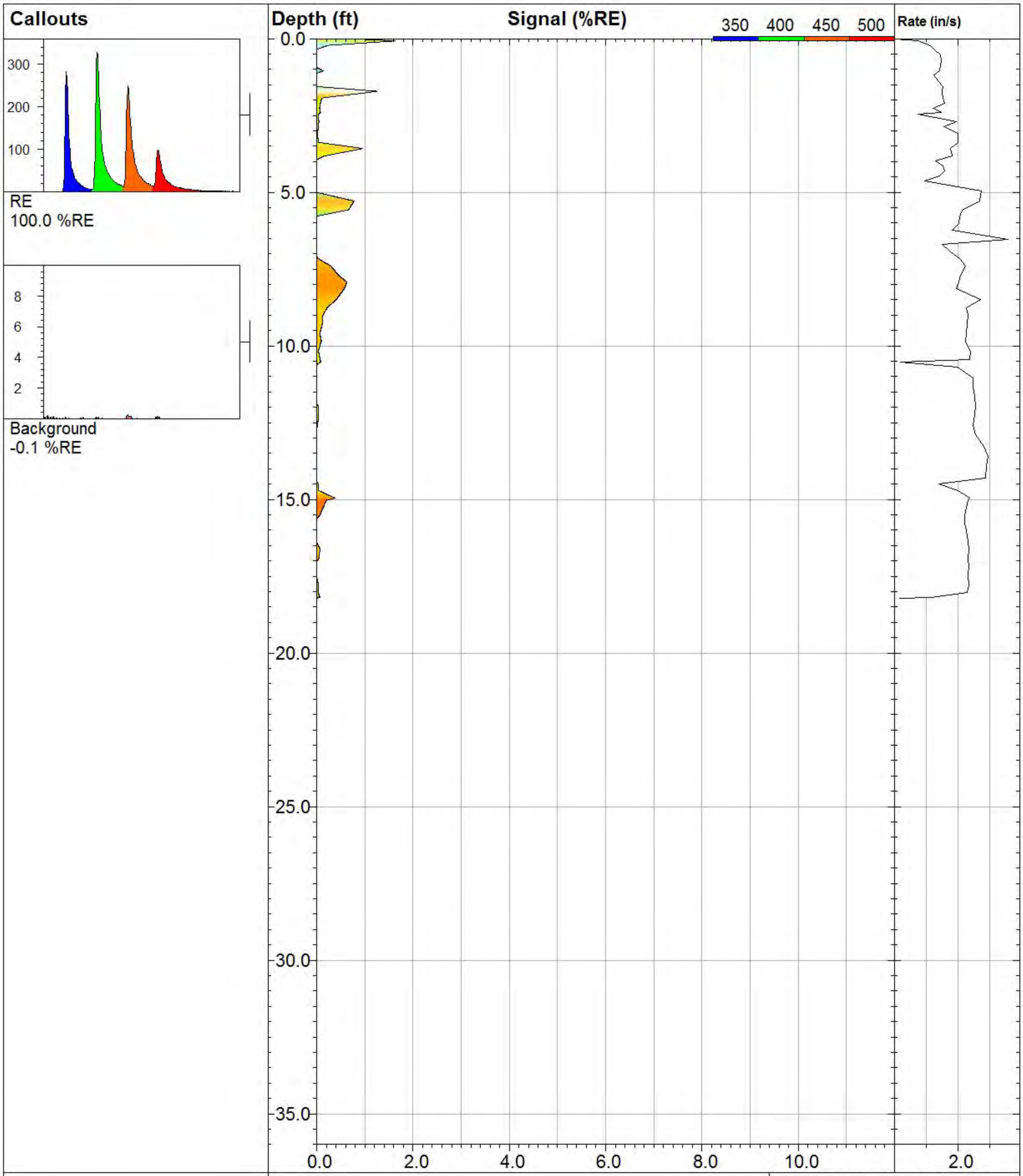


COLUMBIA TECHNOLOGIES

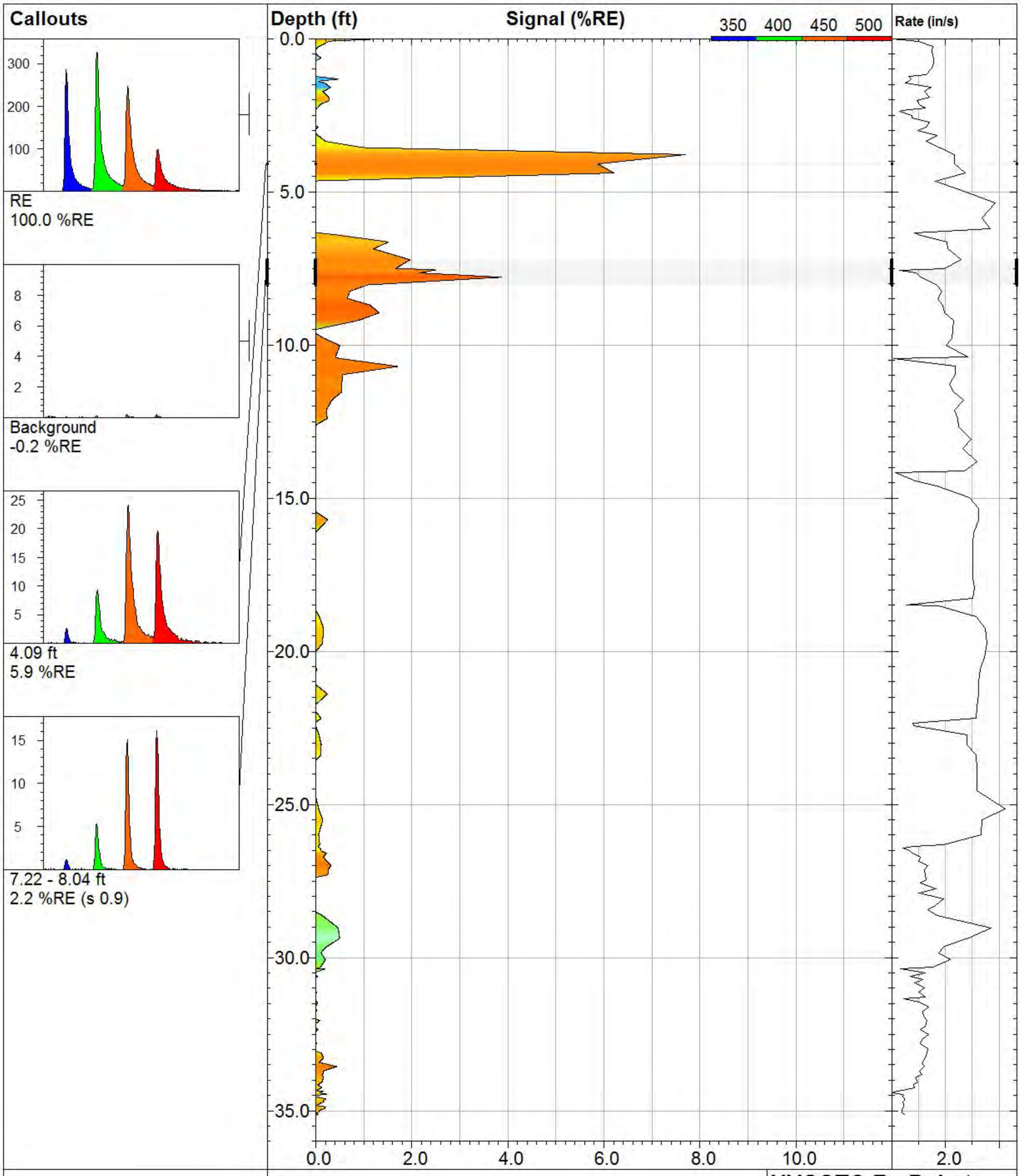
L15

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.24 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **2.6 %RE @ 12.16 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-04 16:15 EDT**



COLUMBIA TECHNOLOGIES	**L16**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.22 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.6 %RE @ 0.07 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 08:37 EDT**



COLUMBIA TECHNOLOGIES

L17

UVOST® By Dakota
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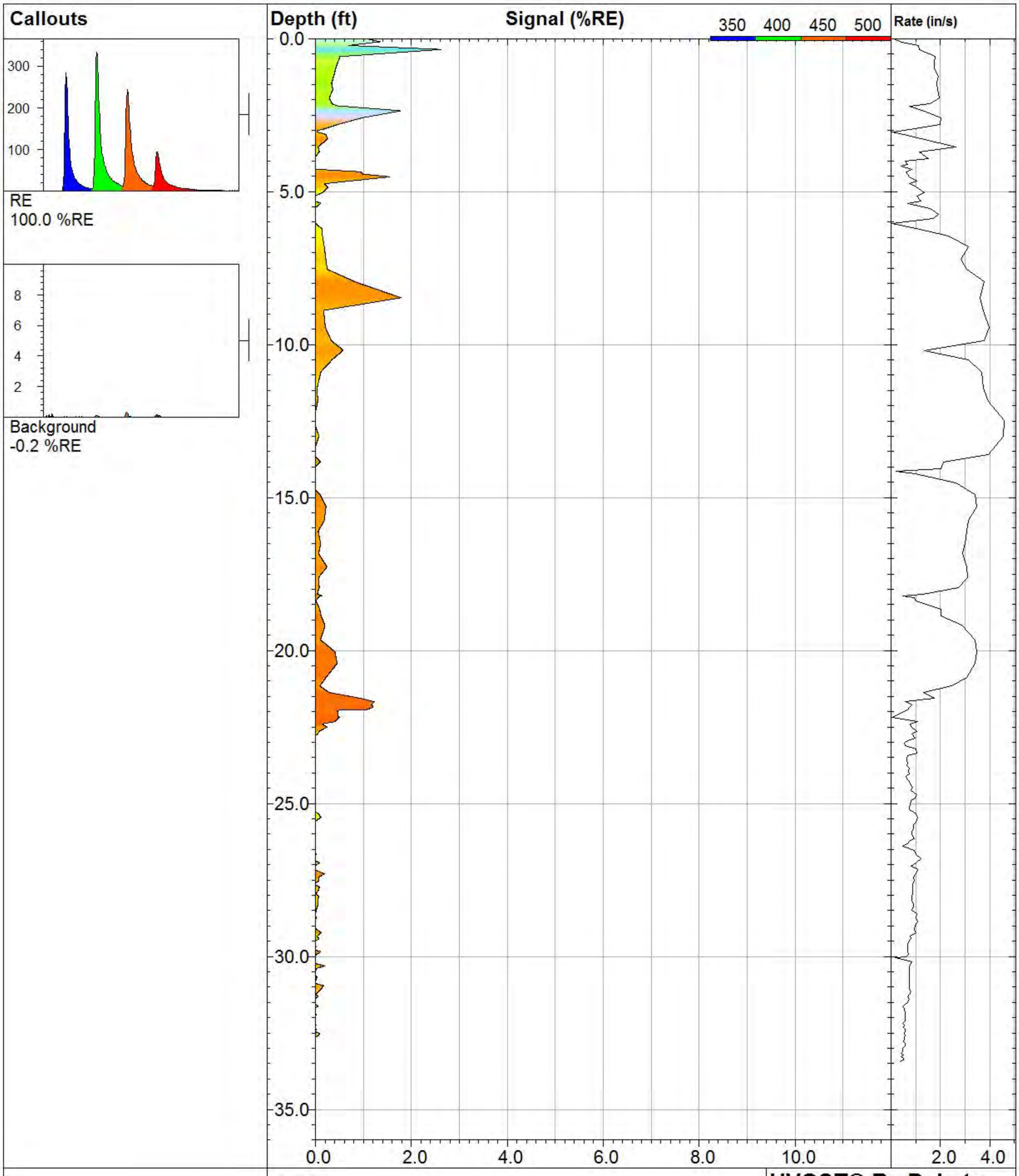
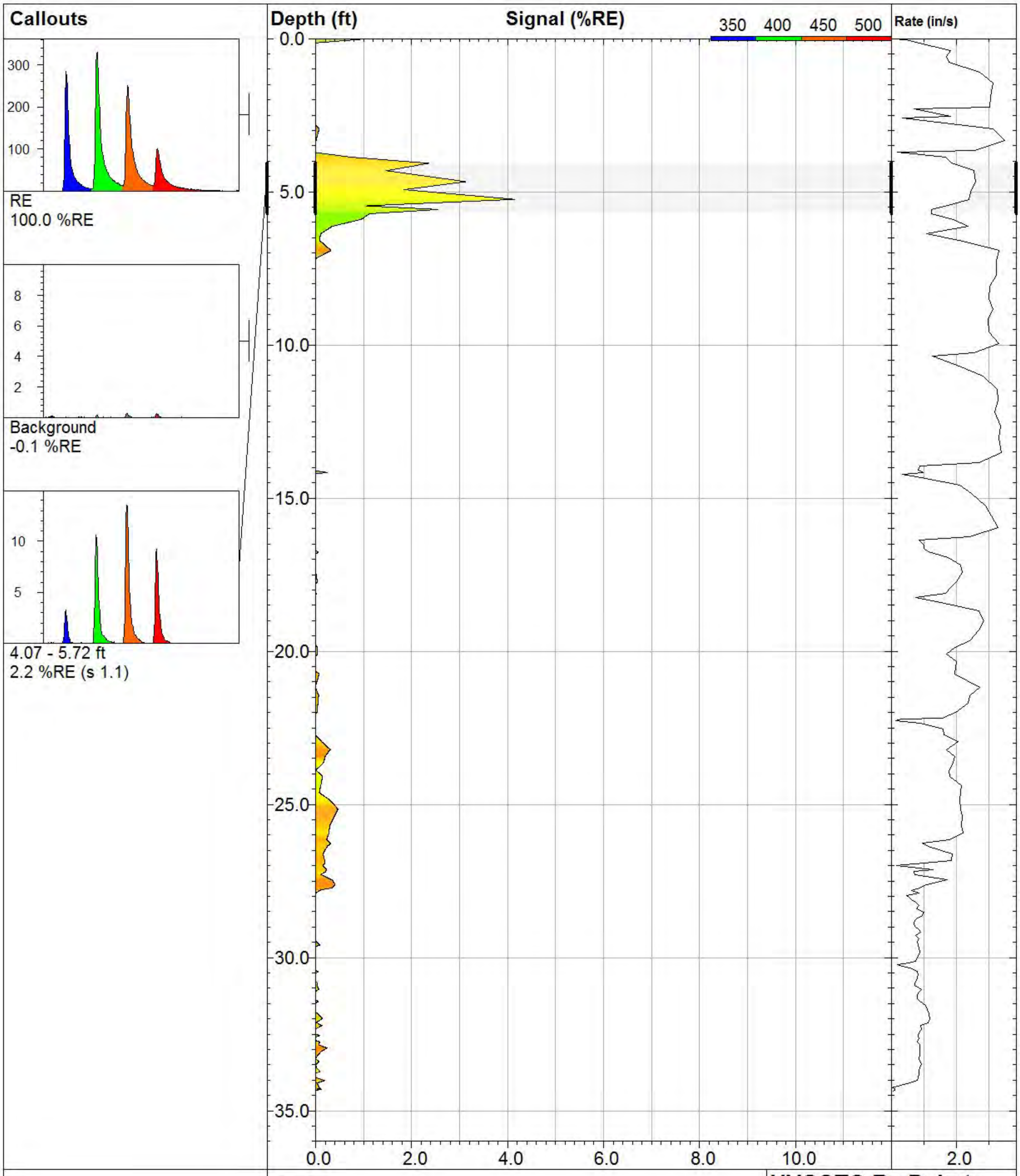
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.14 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **7.7 %RE @ 3.79 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 10:08 EDT**



COLUMBIA TECHNOLOGIES	**L18**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **33.45 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **2.6 %RE @ 0.36 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 14:47 EDT**



COLUMBIA TECHNOLOGIES

L19

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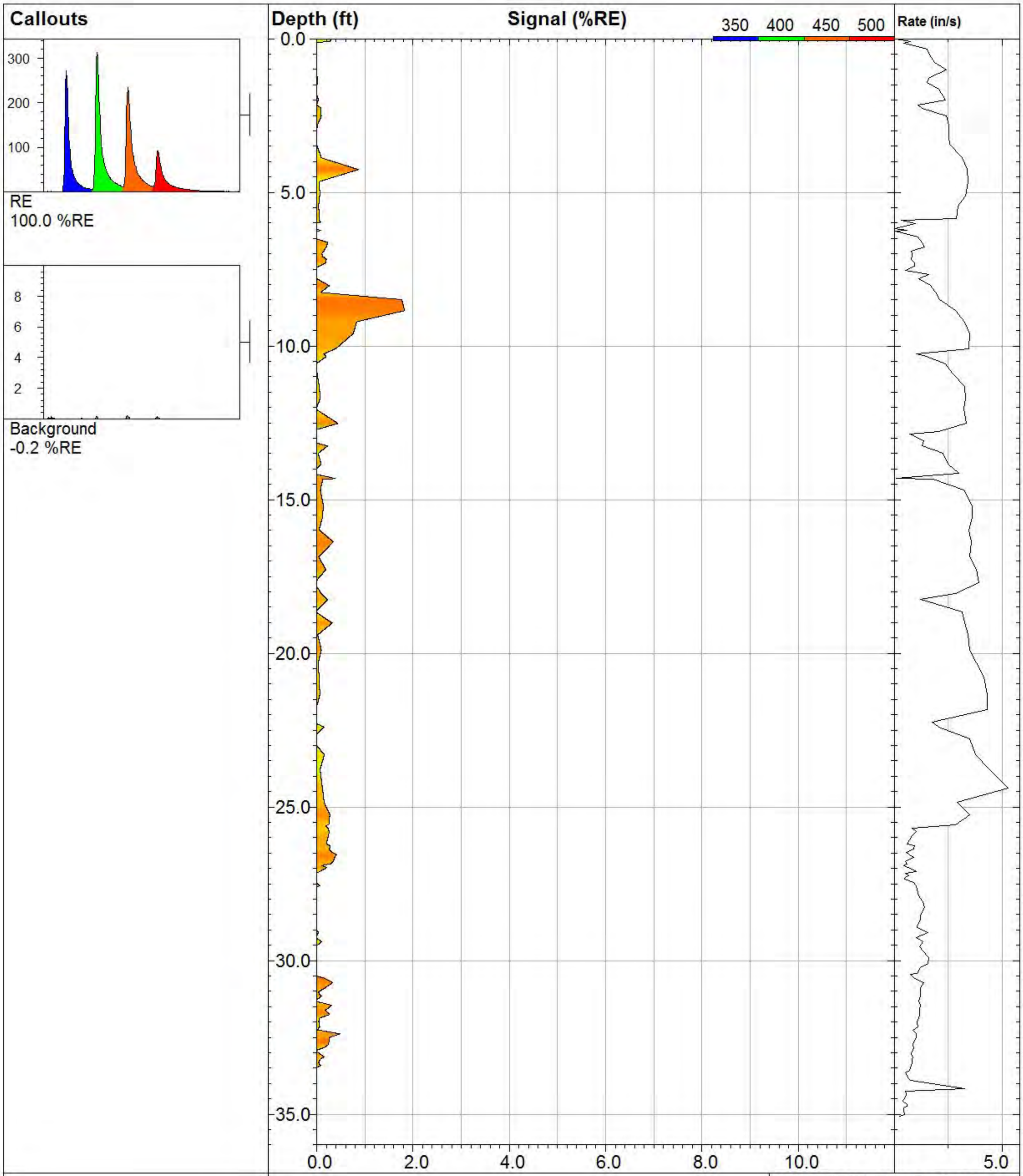
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **34.35 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **4.1 %RE @ 5.25 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 11:15 EDT**



COLUMBIA TECHNOLOGIES

L20

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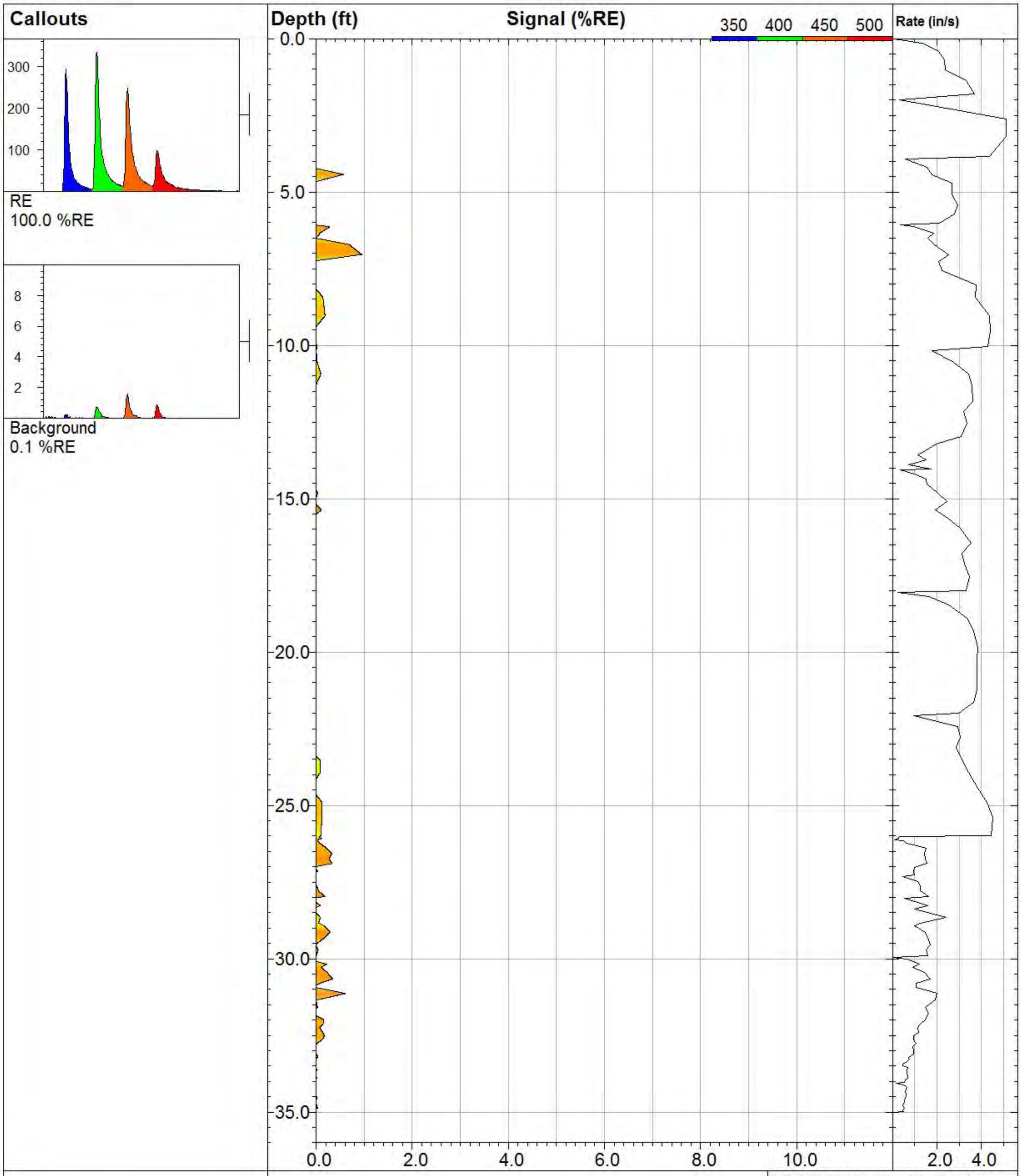
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.06 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.8 %RE @ 8.85 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 12:29 EDT**



L21

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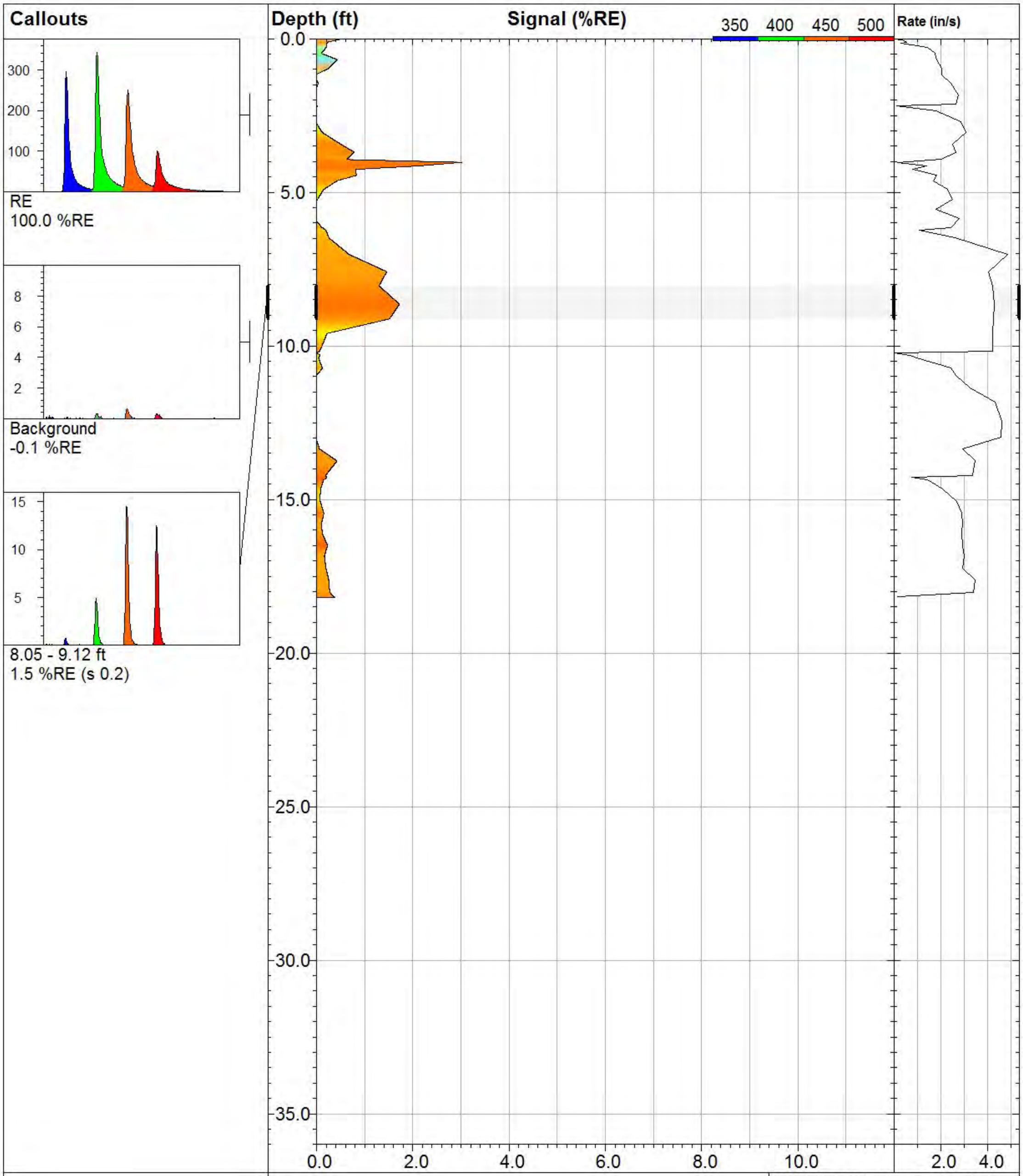
COLUMBIA TECHNOLOGIES

Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **0.9 %RE @ 7.04 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 13:27 EDT**



COLUMBIA TECHNOLOGIES

L22

UVOST® By Dakota
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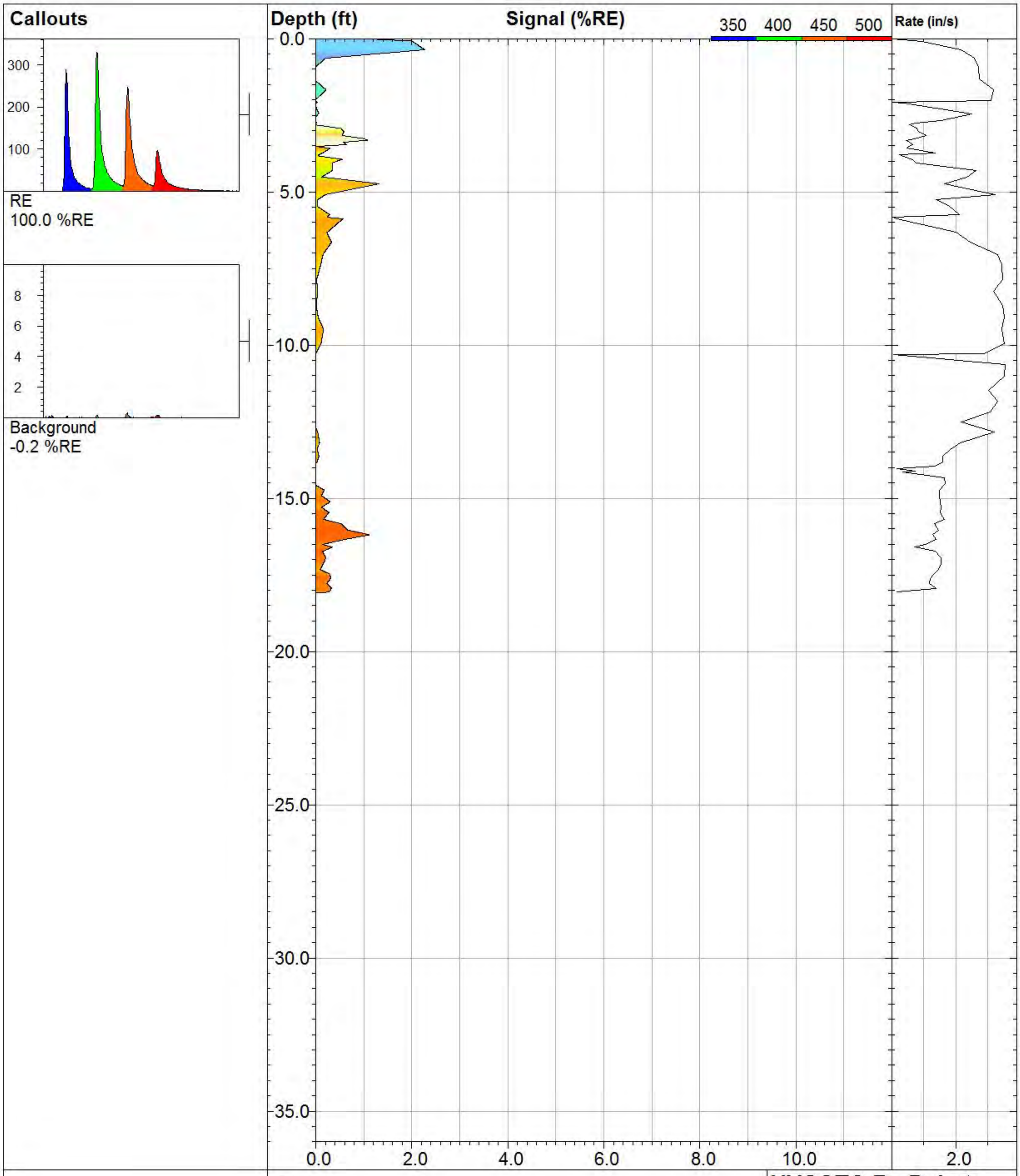
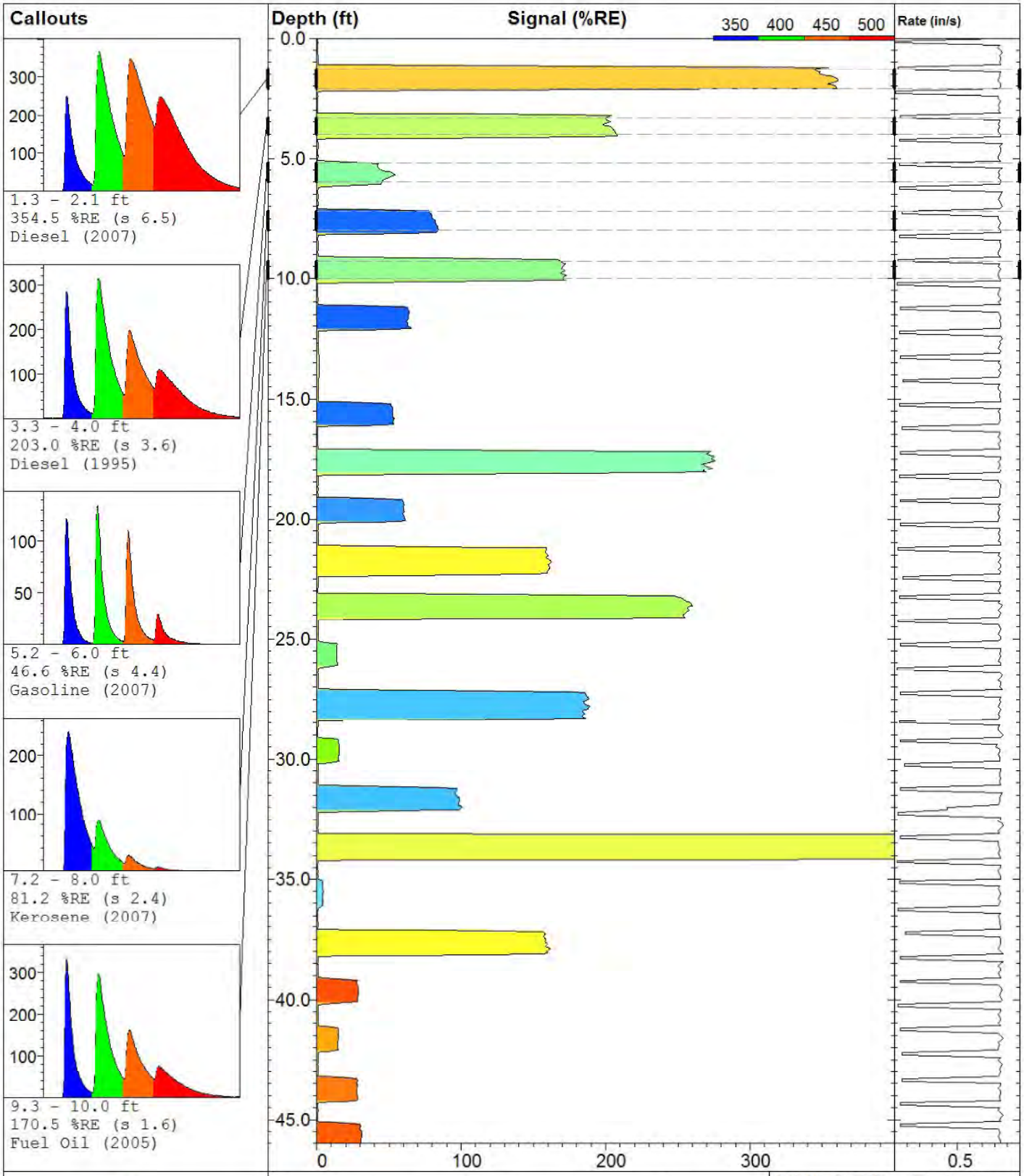
Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.18 ft**
Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **3.0 %RE @ 4.02 ft**
Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 14:24 EDT**



COLUMBIA TECHNOLOGIES	**L23**		**UVOST® By Dakota** www.DakotaTechnologies.com
	Site: **FMC-Baltimore**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **18.07 ft**
	Client / Job: **ERM / 0399916**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **2.3 %RE @ 0.37 ft**
	Operator / Unit: **J.H. Montgomery / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2017-04-05 15:25 EDT**

Appendix E – UVOST Response to Various Saturated Products on Wet Sand



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www.DakotaTechnologies.com

Various products on sand

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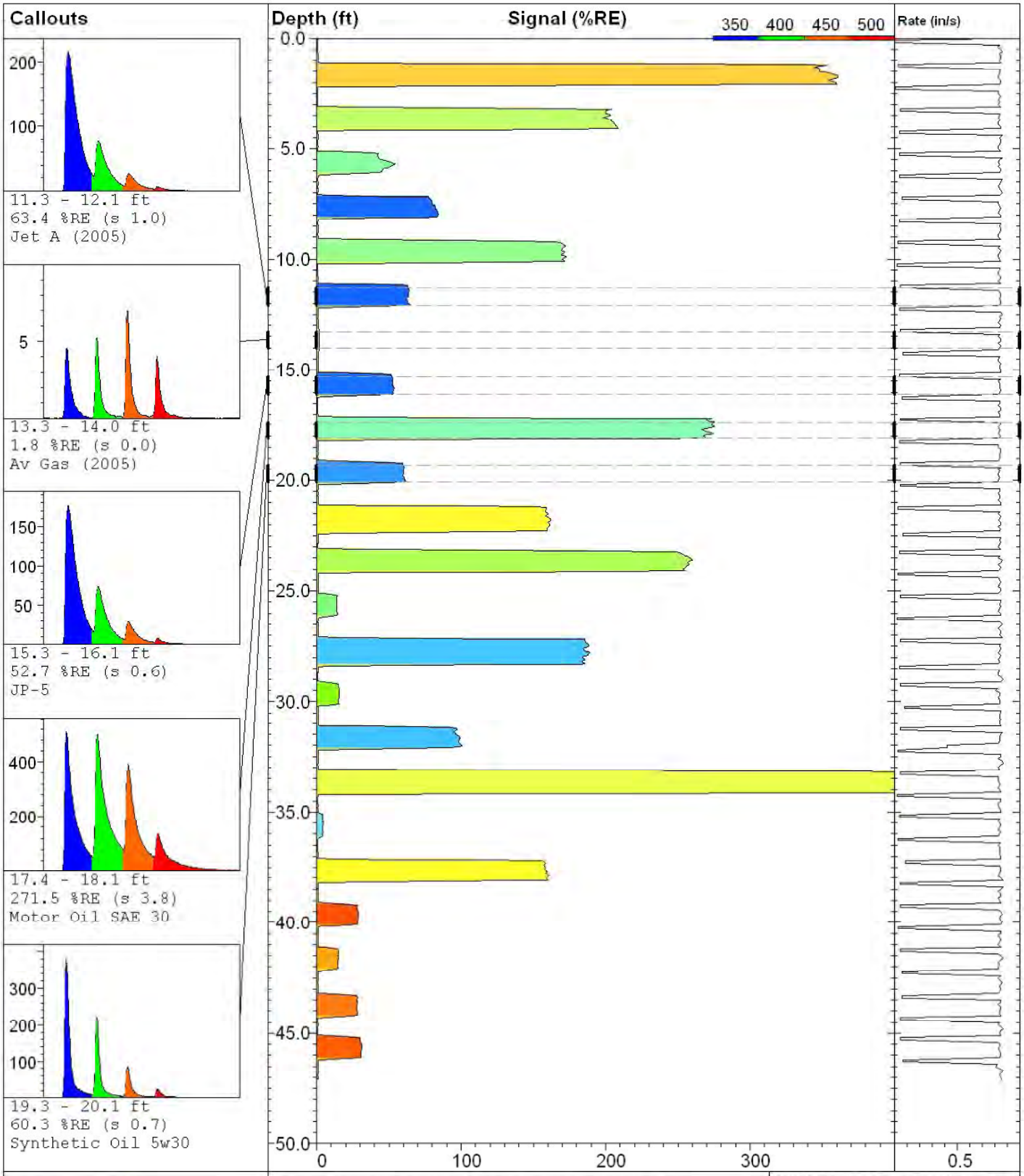
Site: **Examples**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **47.10 ft**
Client: **DTI**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **826.6 % @ 33.20 ft**
Job:	*Operator/Unit:* **T.Rudolph/UVOST1002**	*Date & Time:* **2007-08-24 14:25 CDT**



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Various products on sand

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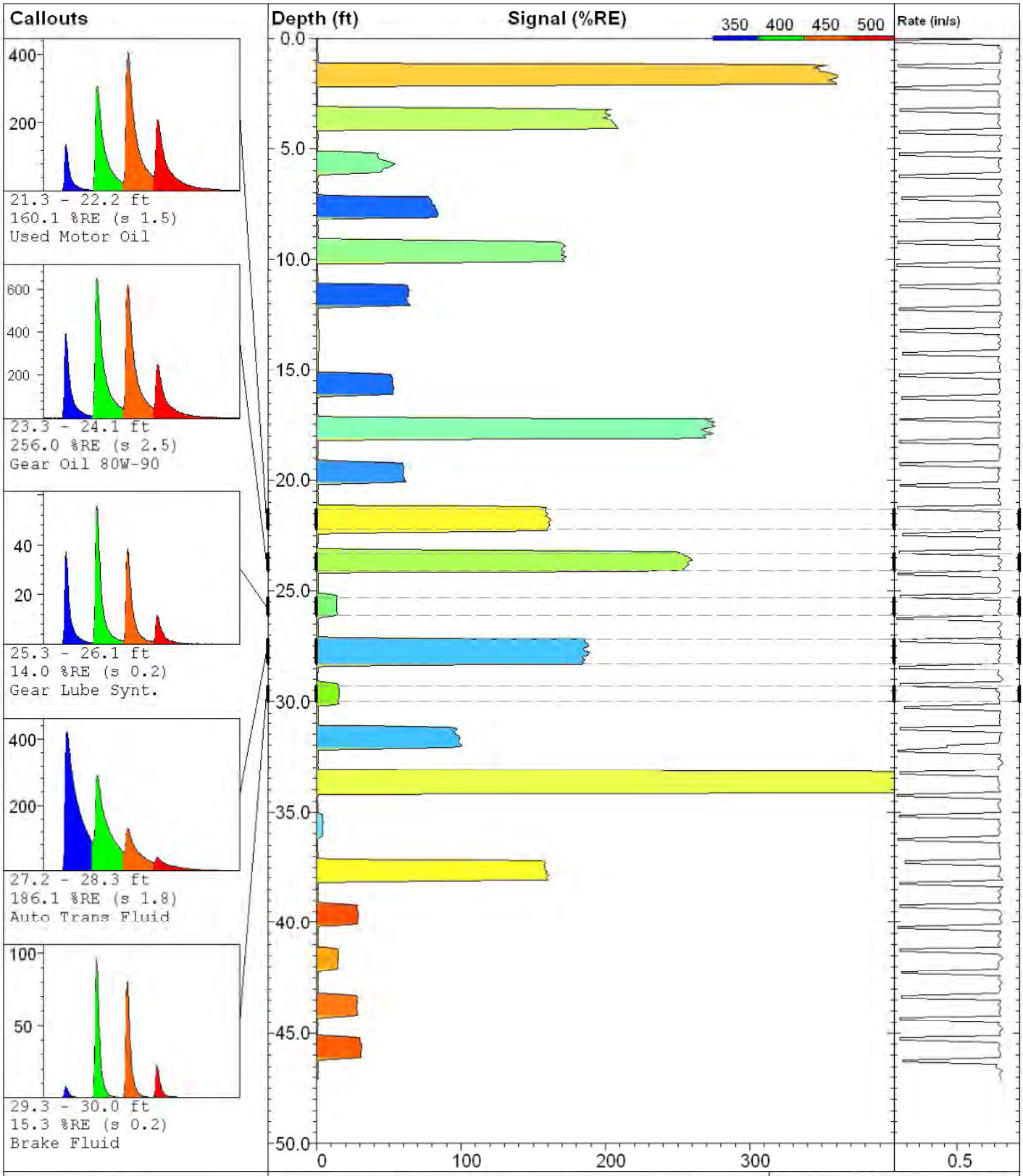
Site: **Examples**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **47.10 ft**
Client: **DTI**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **826.6 % @ 33.20 ft**
Job:	*Operator/Unit:* **T.Rudolph/UVOST1002**	*Date & Time:* **2007-08-24 14:25 CDT**



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Various products on sand

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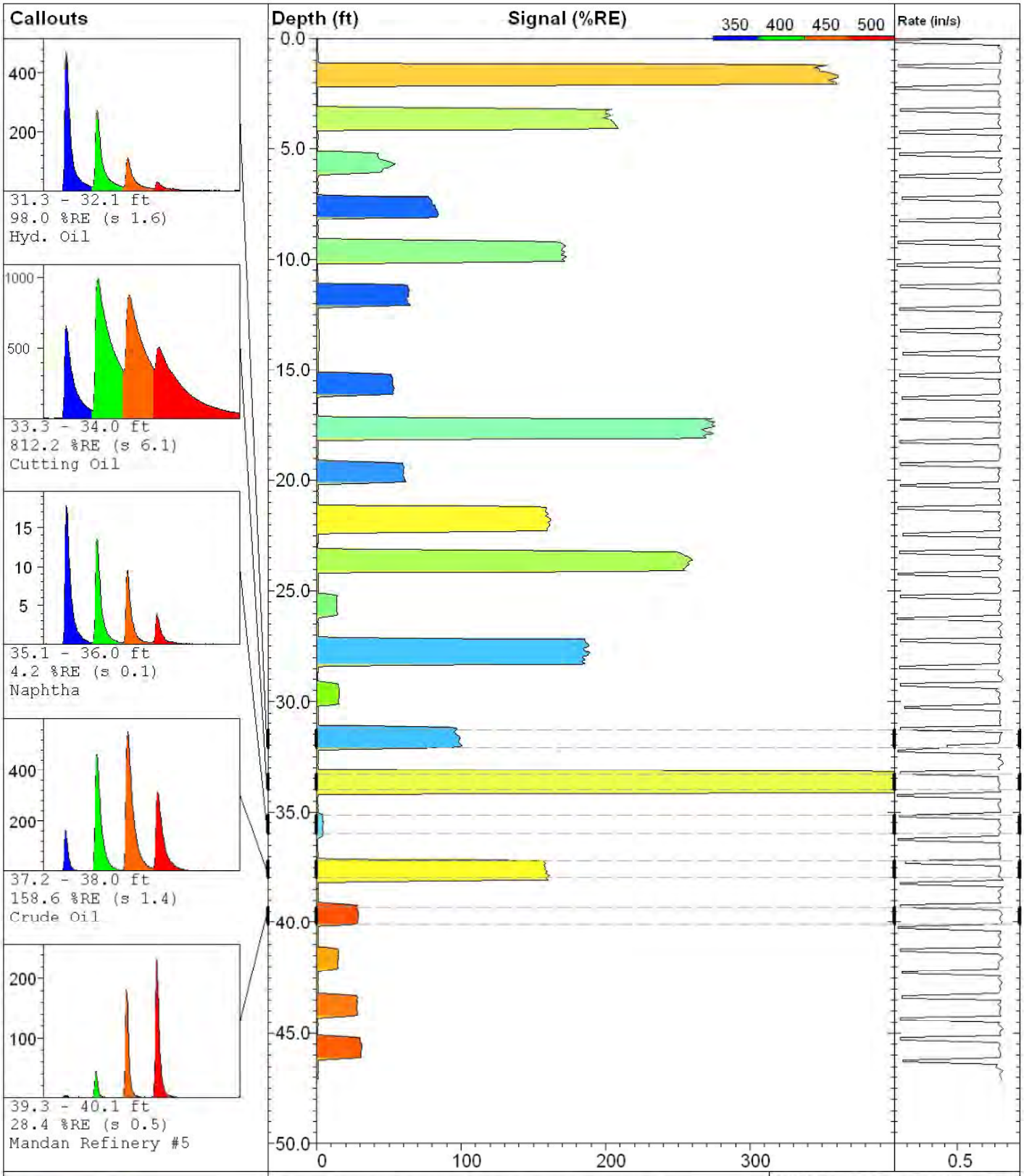
Site: **Examples**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **47.10 ft**
Client: **DTI**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **826.6 % @ 33.20 ft**
Job:	*Operator/Unit:* **T.Rudolph/UVOST1002**	*Date & Time:* **2007-08-24 14:25 CDT**



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Various products on sand

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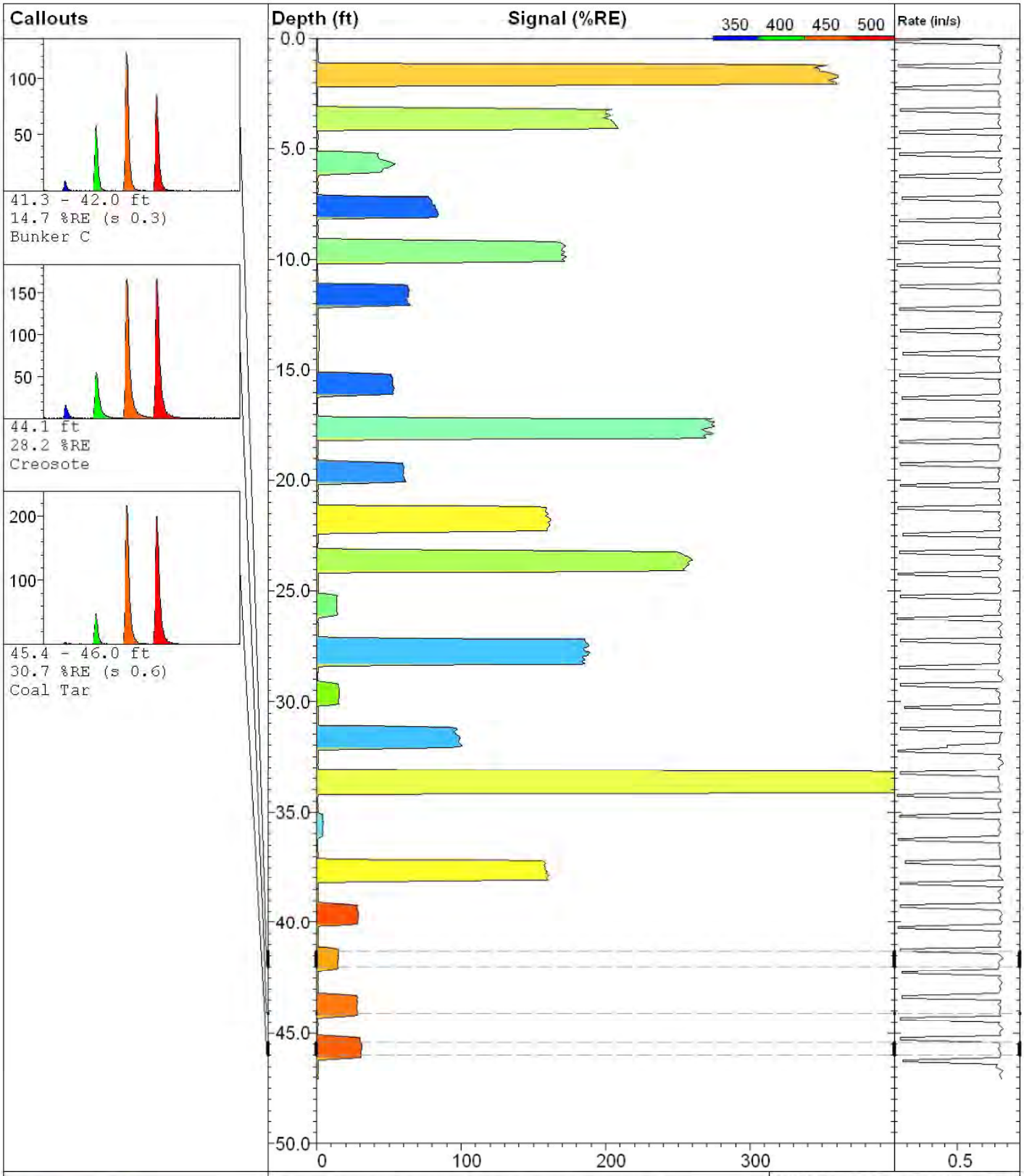
Site: **Examples**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **47.10 ft**
Client: **DTI**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **826.6 % @ 33.20 ft**
Job:	*Operator/Unit:* **T.Rudolph/UVOST1002**	*Date & Time:* **2007-08-24 14:25 CDT**



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Various products on sand

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Site: **Examples**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **47.10 ft**
Client: **DTI**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **826.6 % @ 33.20 ft**
Job:	*Operator/Unit:* **T.Rudolph/UVOST1002**	*Date & Time:* **2007-08-24 14:25 CDT**

List of Symbols, Abbreviations, and Acronyms

Symbol or Abbreviation	Definition
CSM	**Conceptual Site Model.** A **CSM** is a method to describe what is known or can be inferred about a site for the purpose of making a decision. A CSM generally will address physical, chemical and biological systems; contaminant release and transport; societal issues; policy, land use, and exposures.
CVOC	**Chlorinated Volatile Organic Contaminant.** A **VOC**-containing chlorine atoms; typically, a cleaning solvent.
DPT	**Direct-Push Technology** (DPT) refers to a group of techniques used for subsurface investigation by driving, pushing and/or vibrating small-diameter rods into the ground.
ECD	**Electron Capture Detector.** An **ECD** is a device for detecting electron-absorbing components (high electronegativity) such as halogenated compounds in a gas through the attachment of electrons via electron capture ionization.
DNAPL	**Dense Non-Aqueous Phase Liquid.** A **DNAPL** is a denser-than-water NAPL, i.e. a liquid that is both denser than water and is immiscible in or does not dissolve in water.
HPT	**Hydraulic Profiling Tool**. The **HPT** is a logging **tool** that measures the pressure required to inject a flow of water into the soil as the probe is advanced into the subsurface. In addition to measurement of injection pressure, the HPT can also be used to measure hydrostatic pressure under the zero flow condition.
LCSM	**LNAPL Conceptual Site Model.** A **LCSM** is a conceptual site model focused on the release and transport of LNAPL contaminants.
LIF	**Laser-induced fluorescence** is a spectroscopic method in which an atom or molecule is excited to a higher energy level by the absorption of laser light followed by spontaneous emission of light.
LNAPL	**Light Non-Aqueous Phase Liquids** are groundwater contaminants that are not soluble in water and have a lower density than water, in contrast to a **DNAPL** which has a higher density than water.
MIP	**Membrane Interface Probe**. The **MIP** is a direct push tool used to log the relative concentration of volatile organic compounds (VOCs) with depth in soil.

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Symbol or Abbreviation	Definition
PHC	**Petroleum Hydrocarbons.** The presence of petroleum hydrocarbon fuels in any phase. **(PHC).**
PID	**Photo Ionization Detector.** In a **PID** high-energy photons to break molecules into positively charged ions. The **PID** will only respond to components that have ionization energies at or below the energy of the photons produced by the **PID** lamp.
SPOC	**Shock Protected Optical Cavity**. The **SPOC** is the component of the LIF system that contains the mirror and sapphire window for proper alignment of the laser beam.
TCE	**Trichloroethylene.** The chemical compound **TCE** is a halocarbon commonly used as an industrial solvent. It is a clear non-flammable liquid with a sweet smell.
UST	**Underground Storage Tank.** Under Federal law, **UST** means any one or combination of tanks including connected underground pipes that is used to contain regulated substances, and the volume of which including the volume of underground pipes is 10 percent or more beneath the surface of the ground. This does not include, among other things, any farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes, tanks for storing heating oil for consumption on the premises, or septic tanks.
UVOST®	**Ultraviolet Optical Scanning Tool®.** A **LIF** is a tool that uses laser light in the ultraviolet spectrum to excite fluorescent molecules that exist in the vast majority of hazardous non-aqueous phase liquids (NAPLs) such as petroleum fuels/oils, coal tars, and creosotes.
VOC	**Volatile organic compounds** (**VOCs**) are organic chemicals that have a high vapor pressure at ordinary room temperature. Their high vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air, a trait known as volatility.
XSD	**Halogen Specific Detector.** The **XSD** was developed for the selective detection of halogen-containing compounds.

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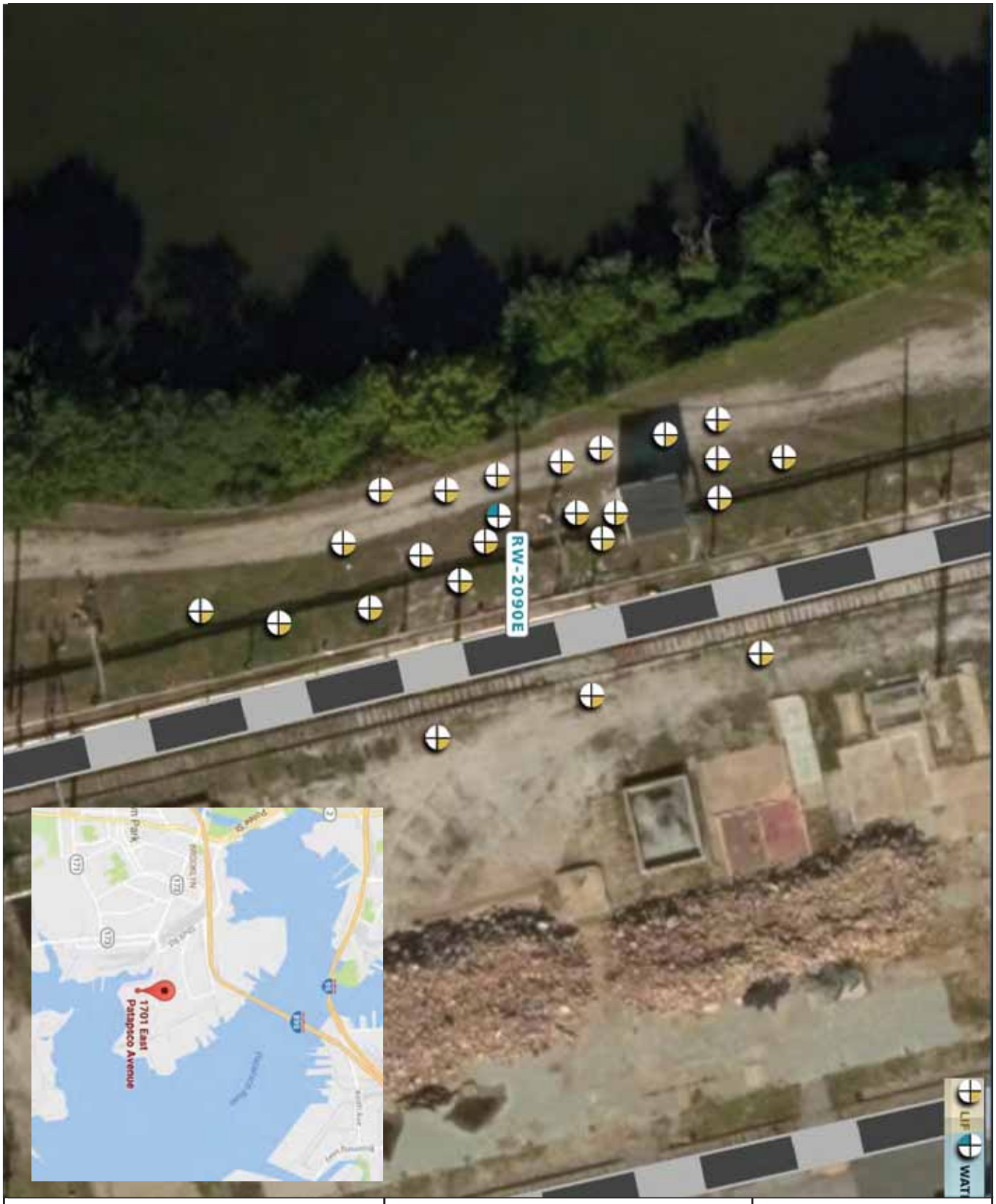
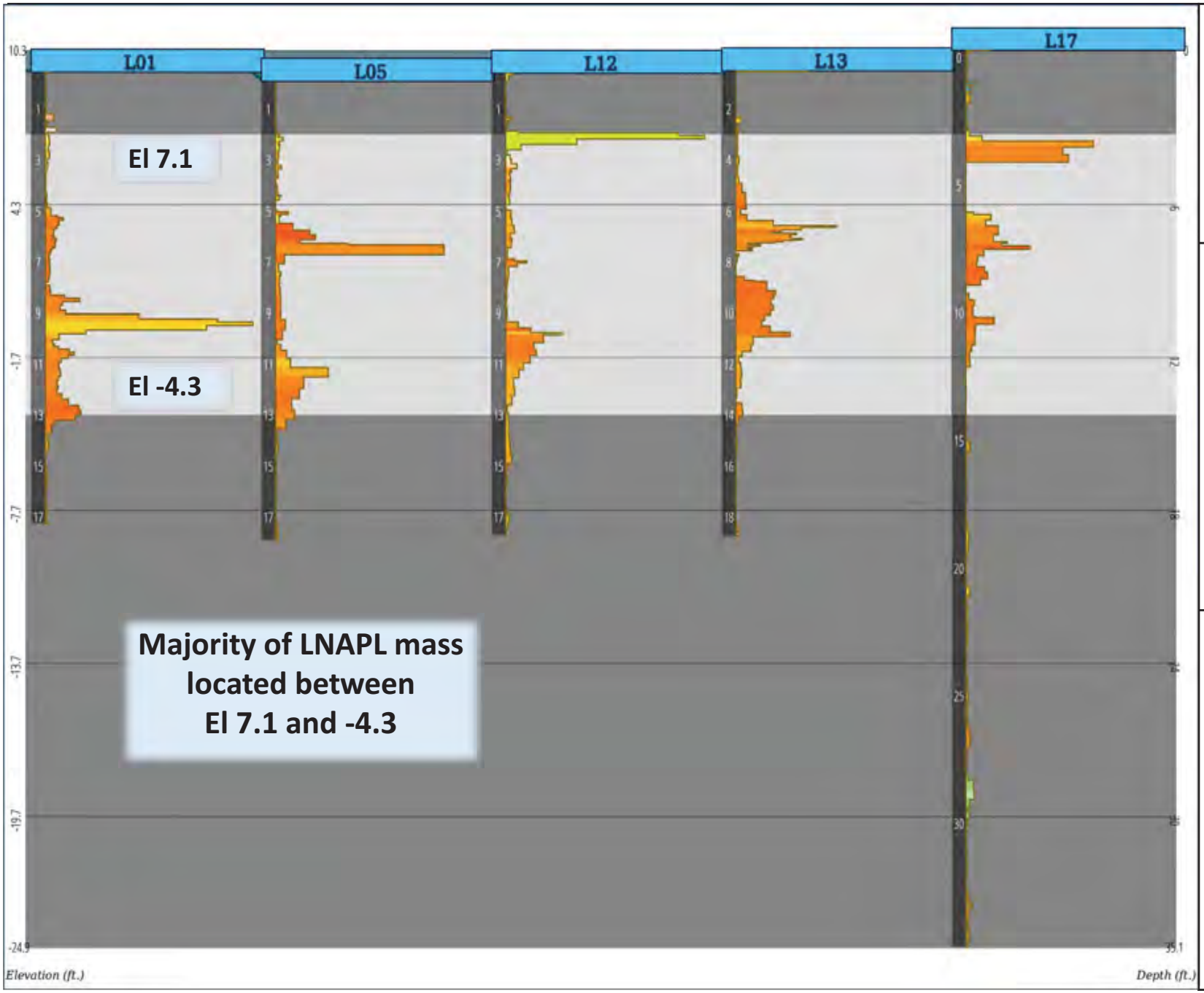


COLUMBIA TECHNOLOGIES	**FMC Baltimore** Baltimore, MD		**LIF Survey Locations**
	High-Resolution Site Characterization	April 2017	**Figure 1**

COLUMBIA TECHNOLOGIES	**FMC Baltimore** Baltimore, MD		**LIF Survey** **Station ID Numbers**
	High-Resolution Site Characterization	April 2017	**Figure 2**



Vertical Extent of LNAPL

Figure 3

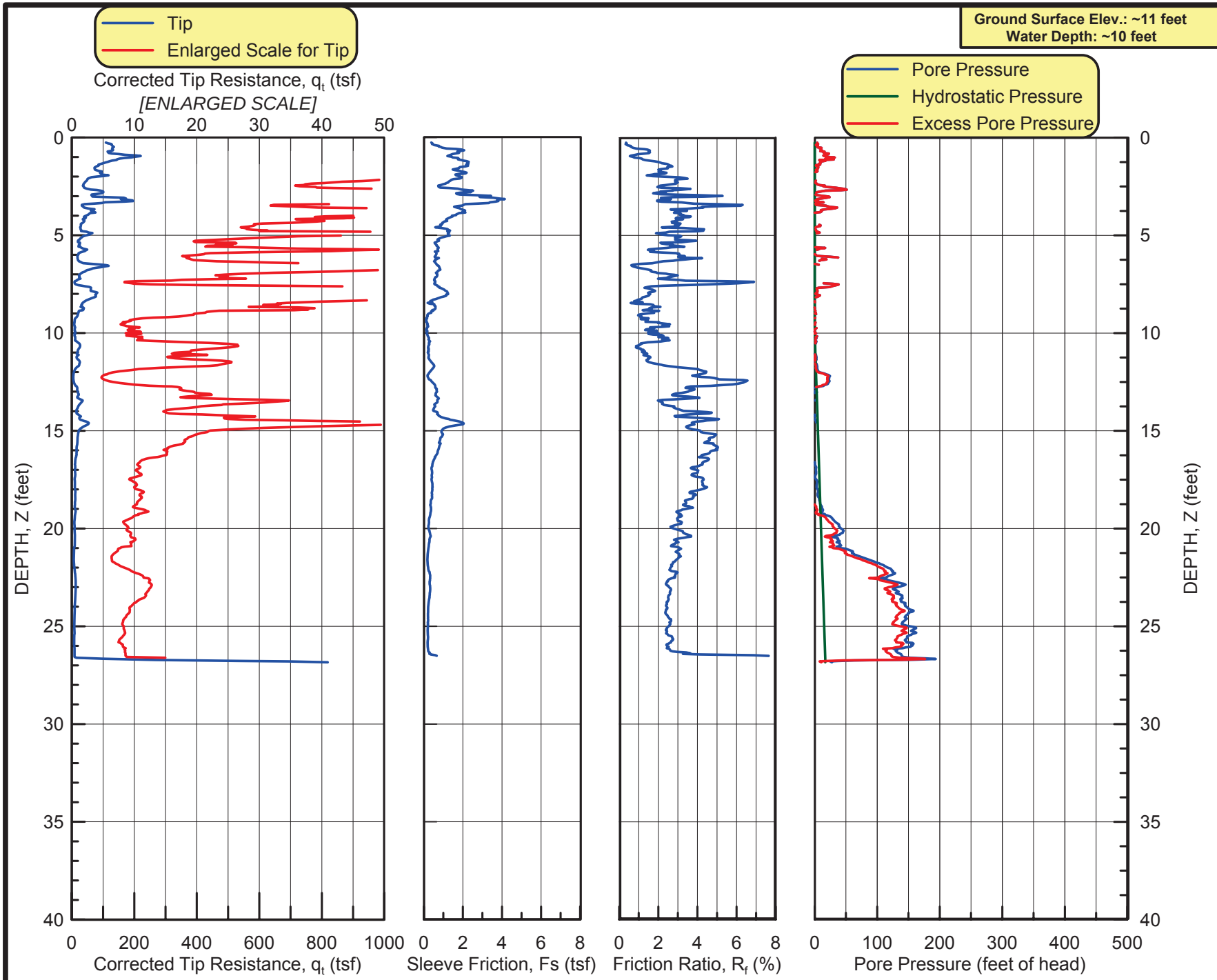
FMC Baltimore
Baltimore, MD

April 2017

High-Resolution Site Characterization

COLUMBIA TECHNOLOGIES

CONE PENETROMETER TESTING REPORTS



Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

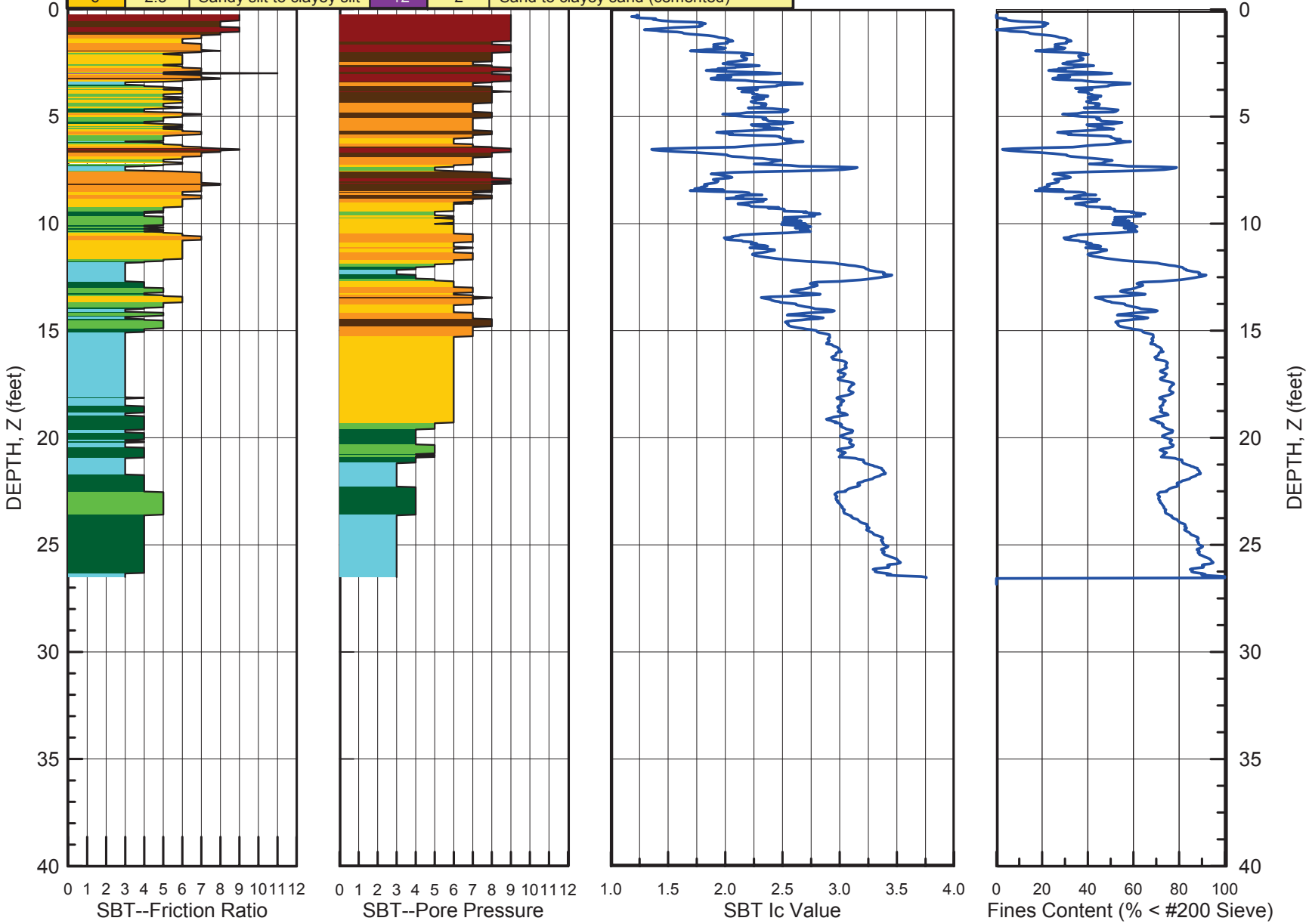
CONE PENETROMETER TEST RESULTS

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-1

Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)

Ground Surface Elev.: ~11 feet
Water Depth: ~ ~10 feet

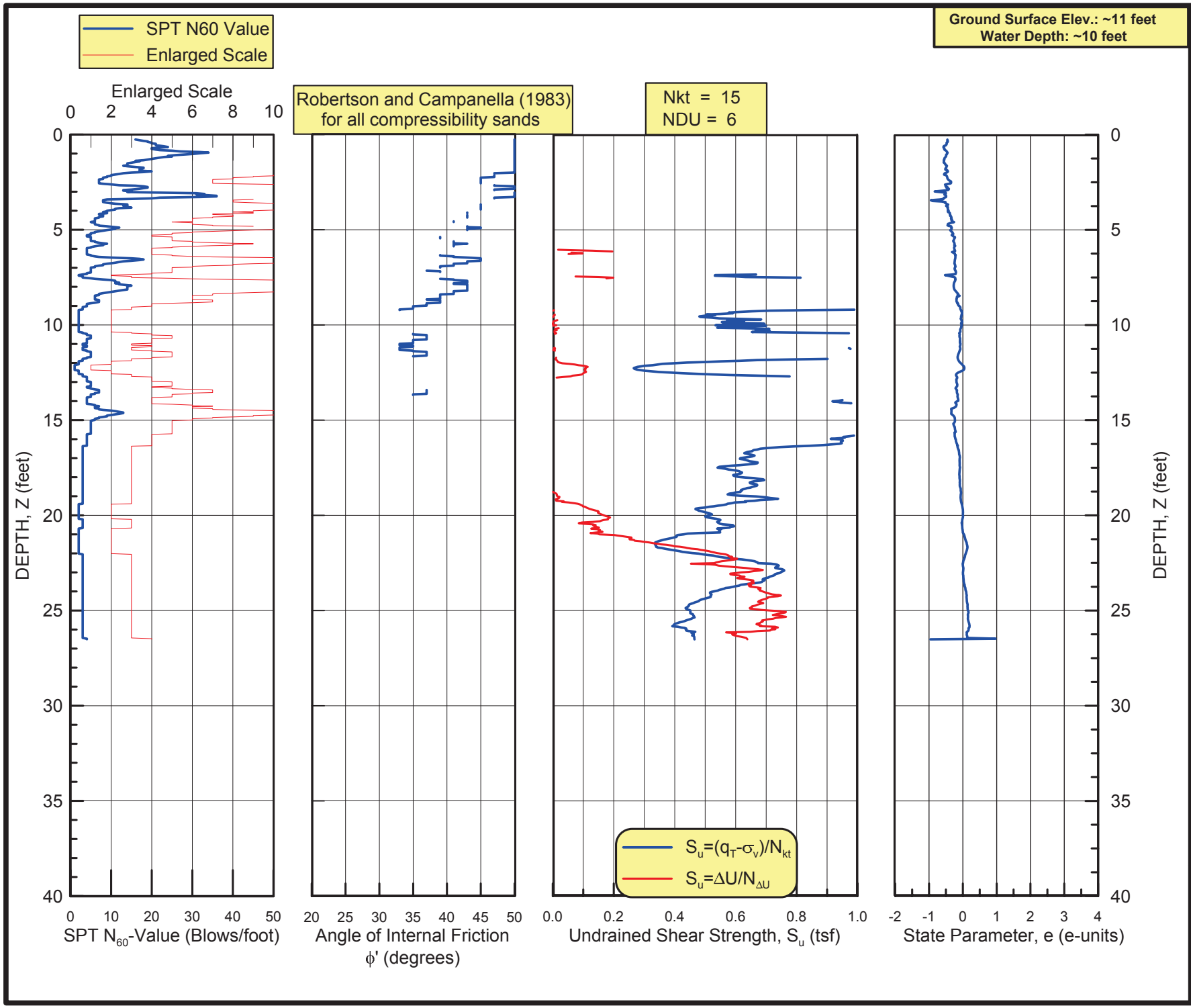


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-1



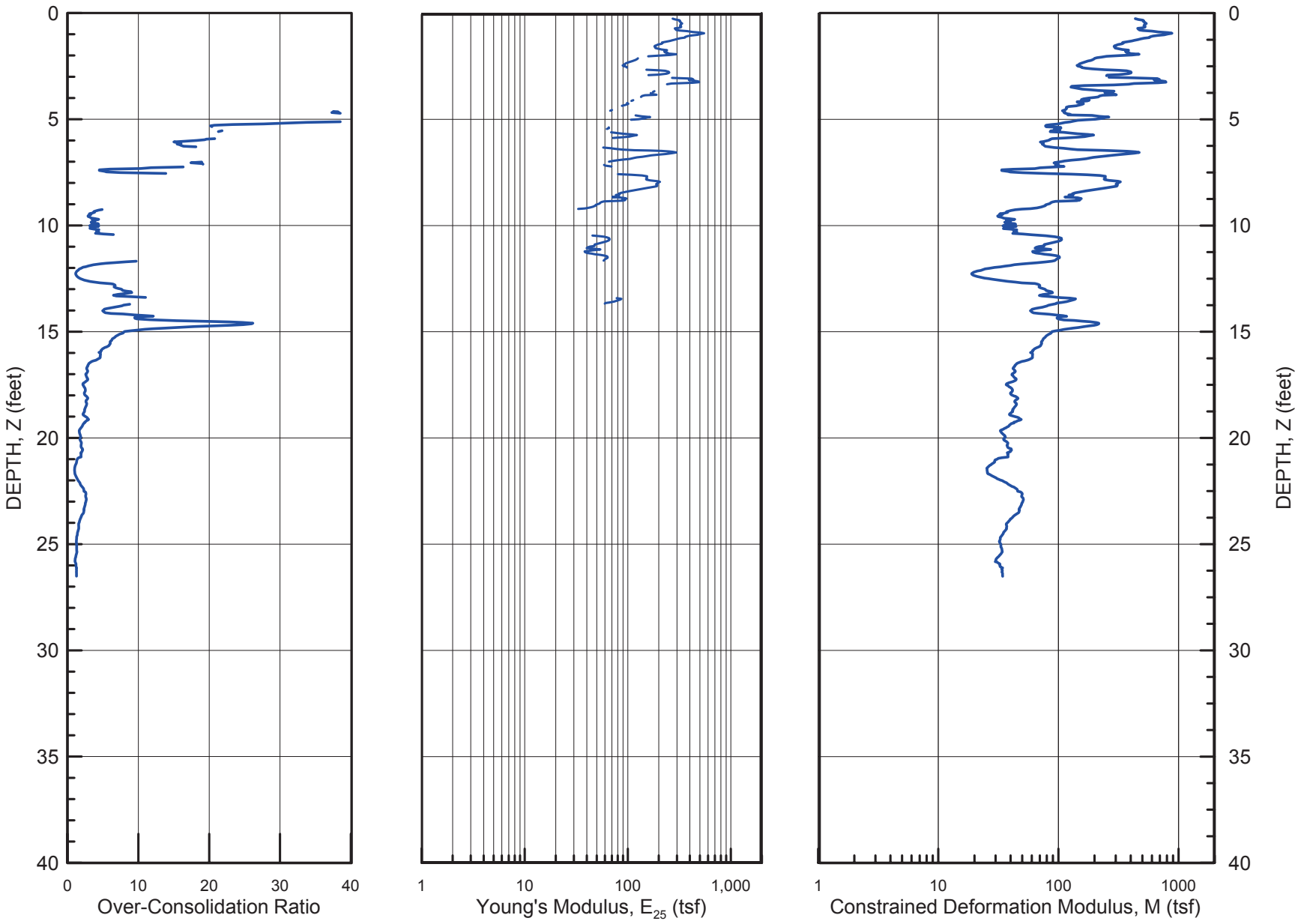
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL SHEAR STRENGTH INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-1

Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

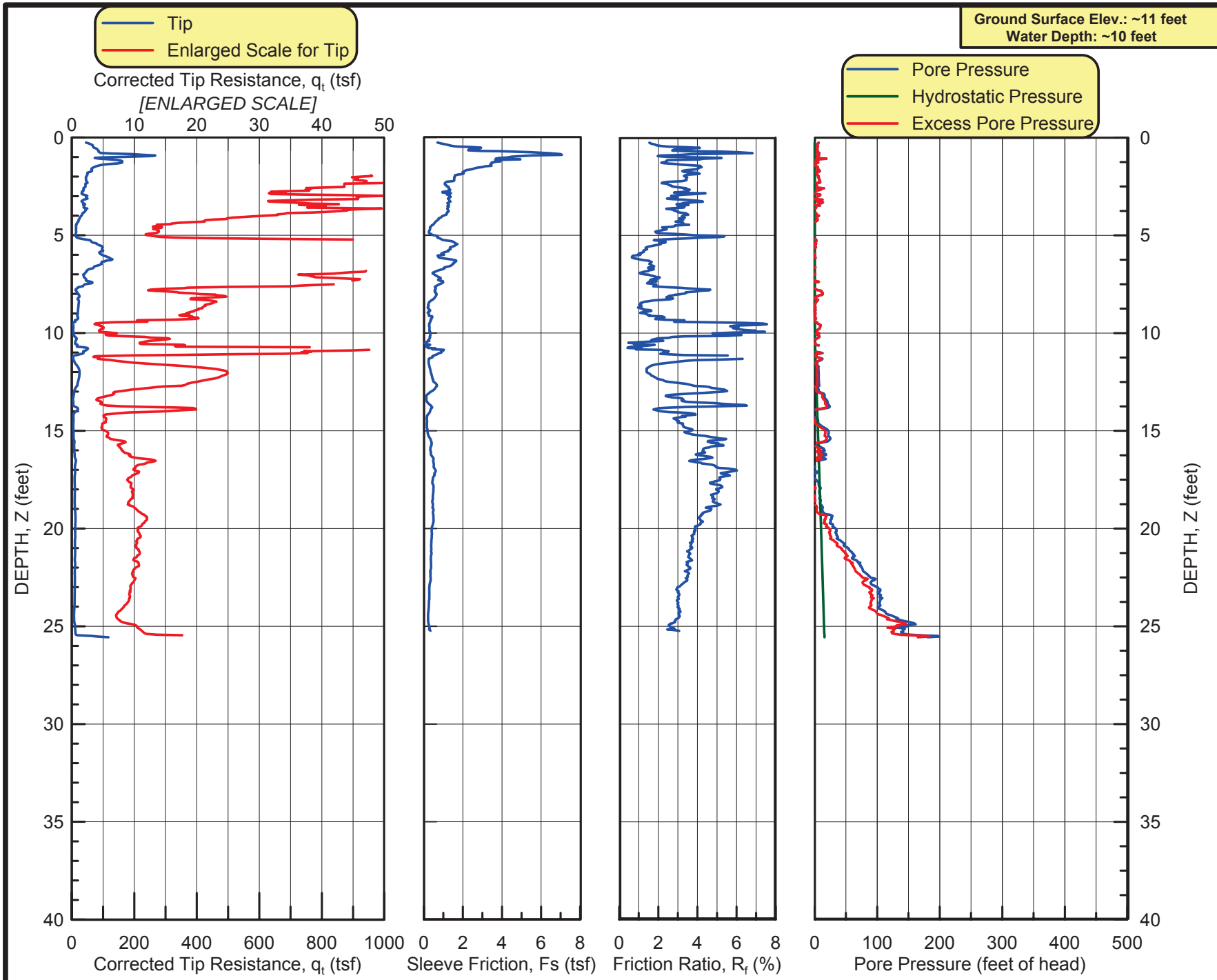


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL MODULUS INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-1



Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

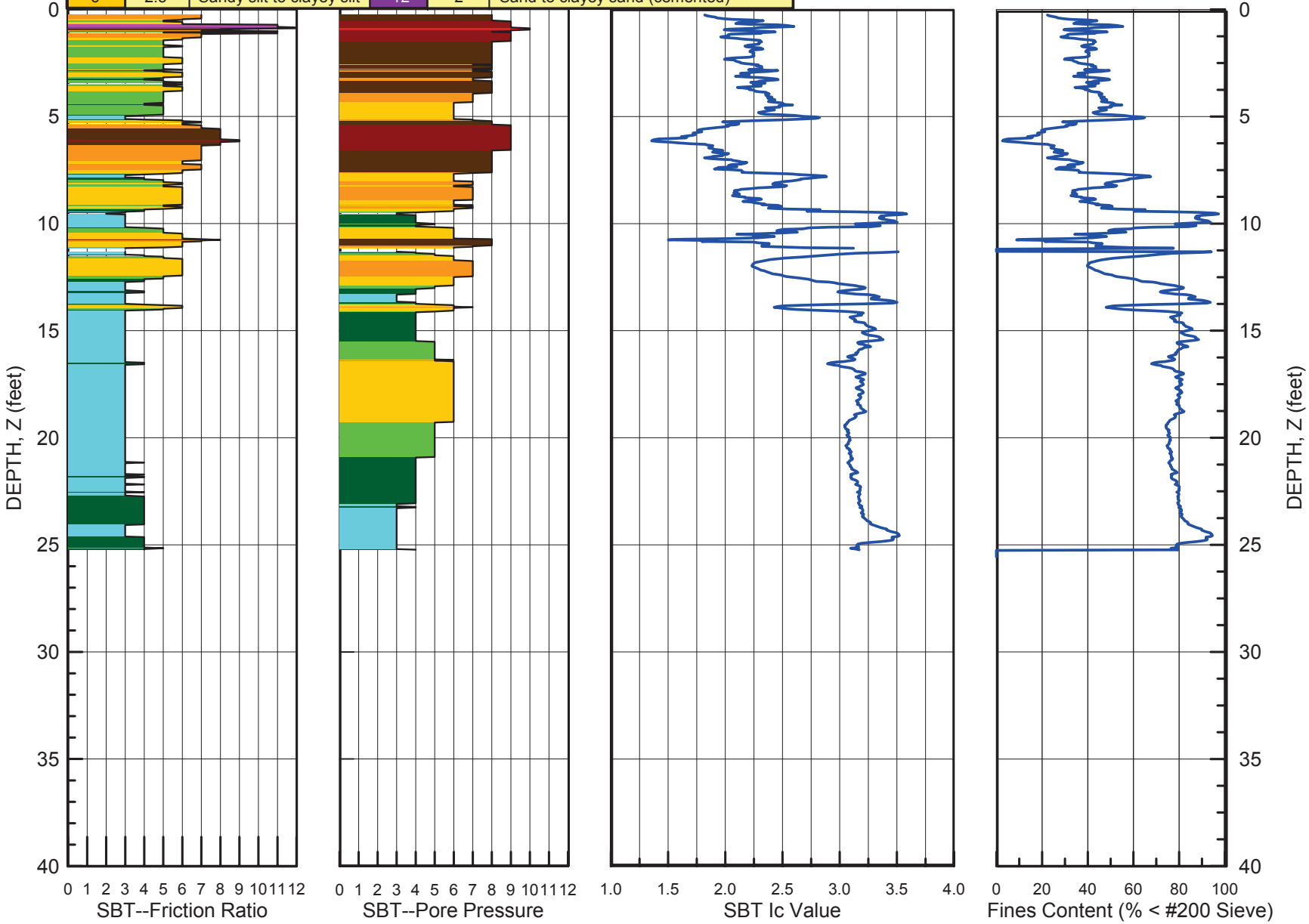
CONE PENETROMETER TEST RESULTS

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-2

Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)

Ground Surface Elev.: ~11 feet
Water Depth: ~ ~10 feet

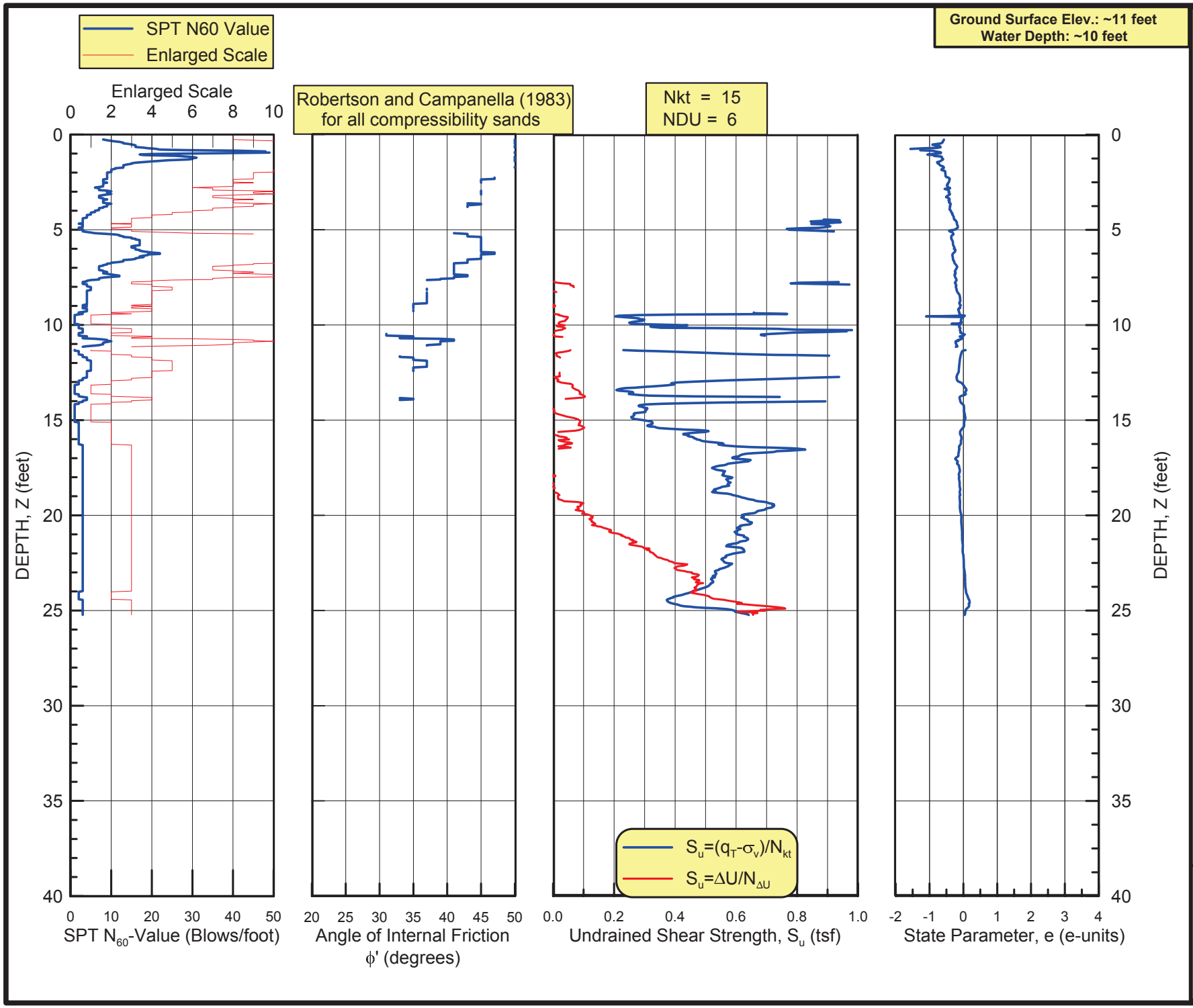


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-2



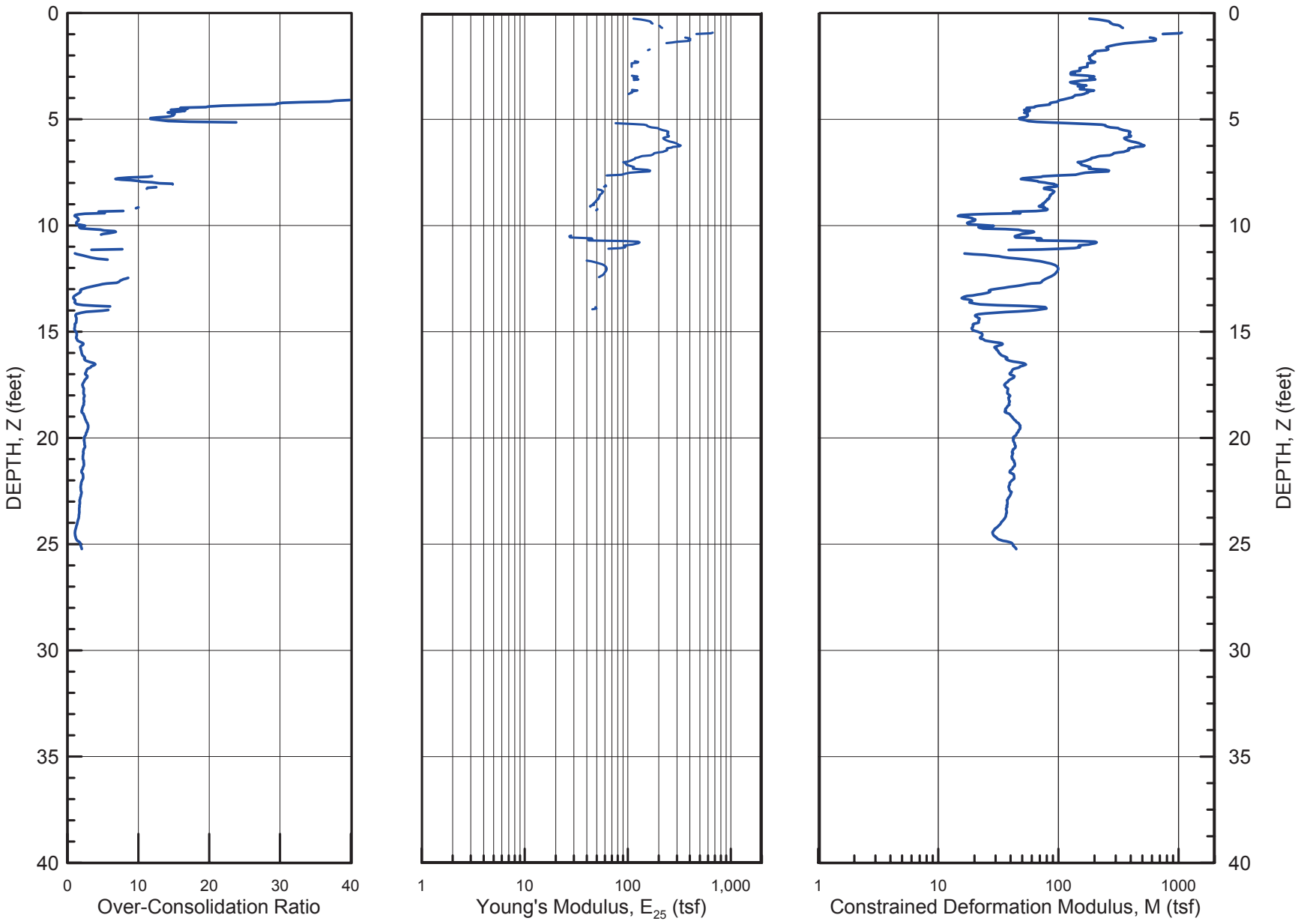
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL SHEAR STRENGTH INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-2

Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

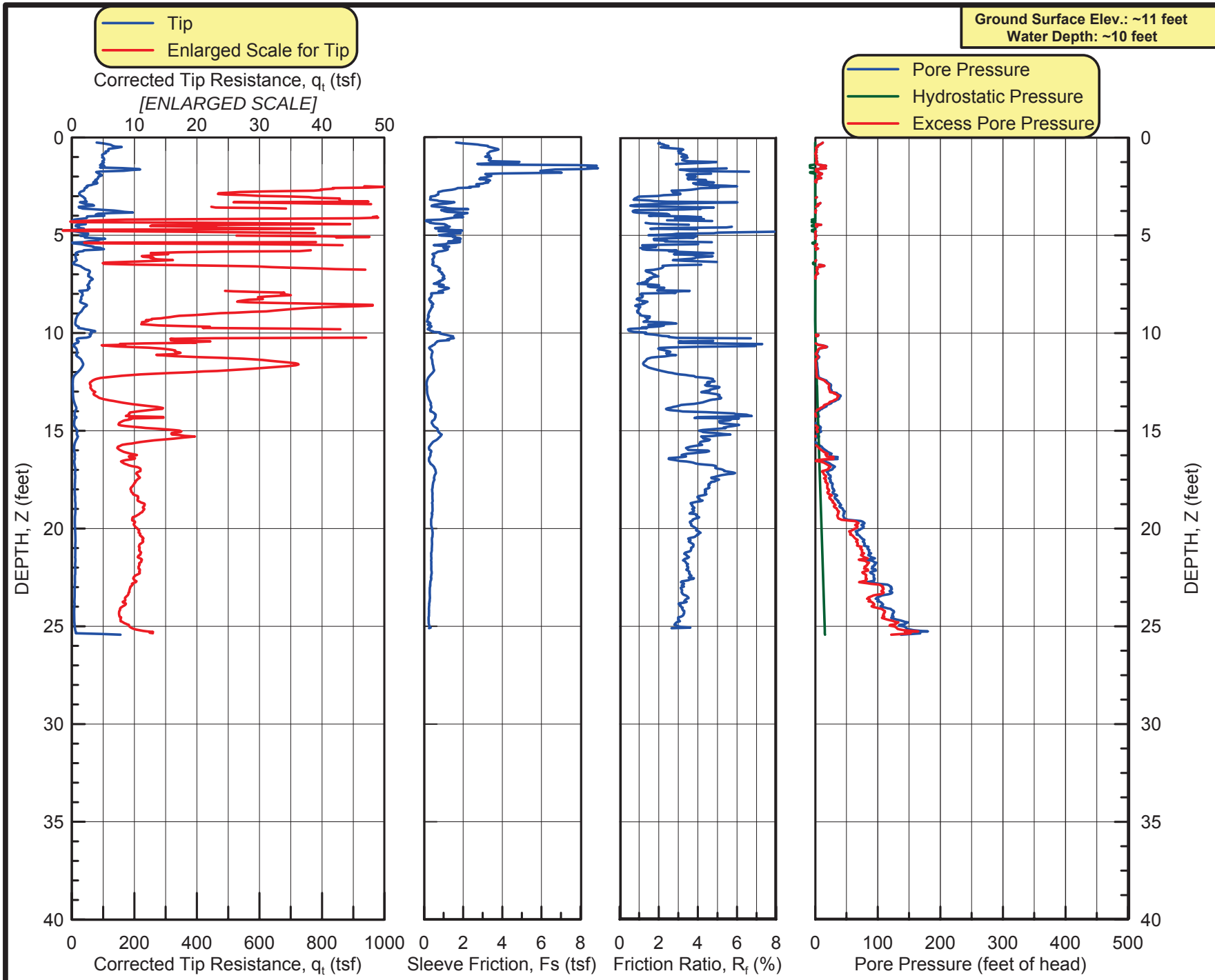


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL MODULUS INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-2



Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

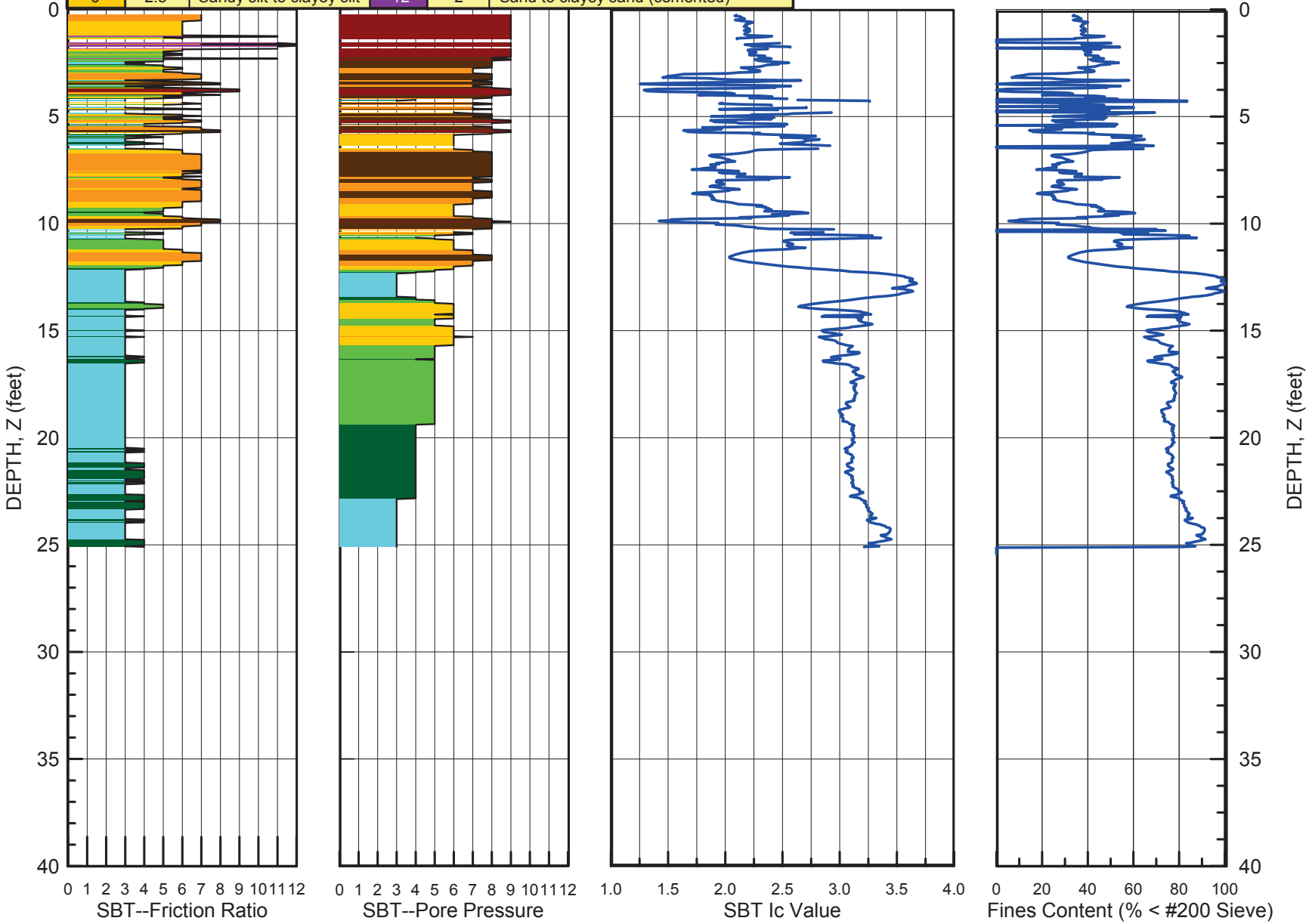
CONE PENETROMETER TEST RESULTS

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-3

Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)

Ground Surface Elev.: ~11 feet
Water Depth: ~ ~10 feet

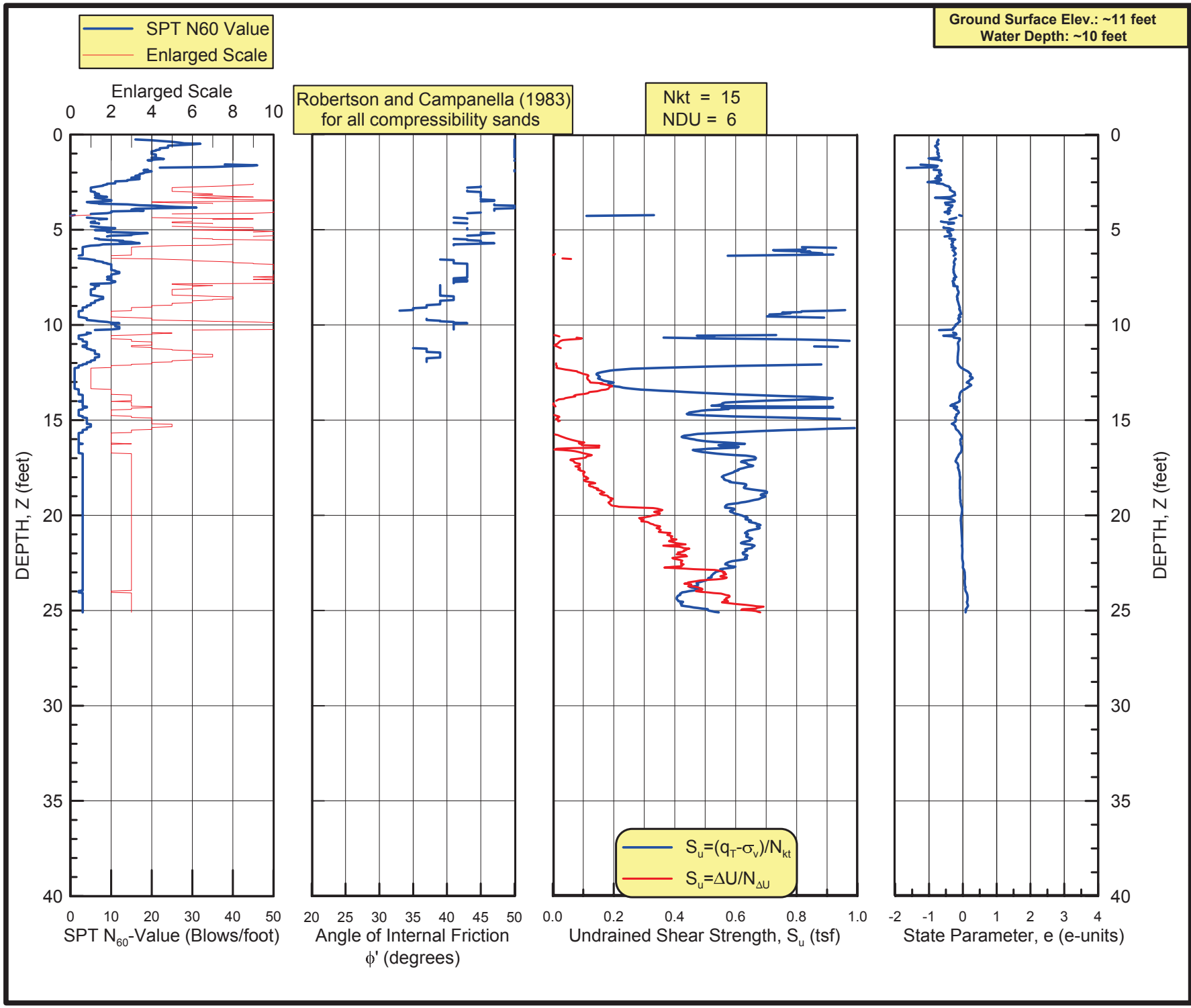


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-3



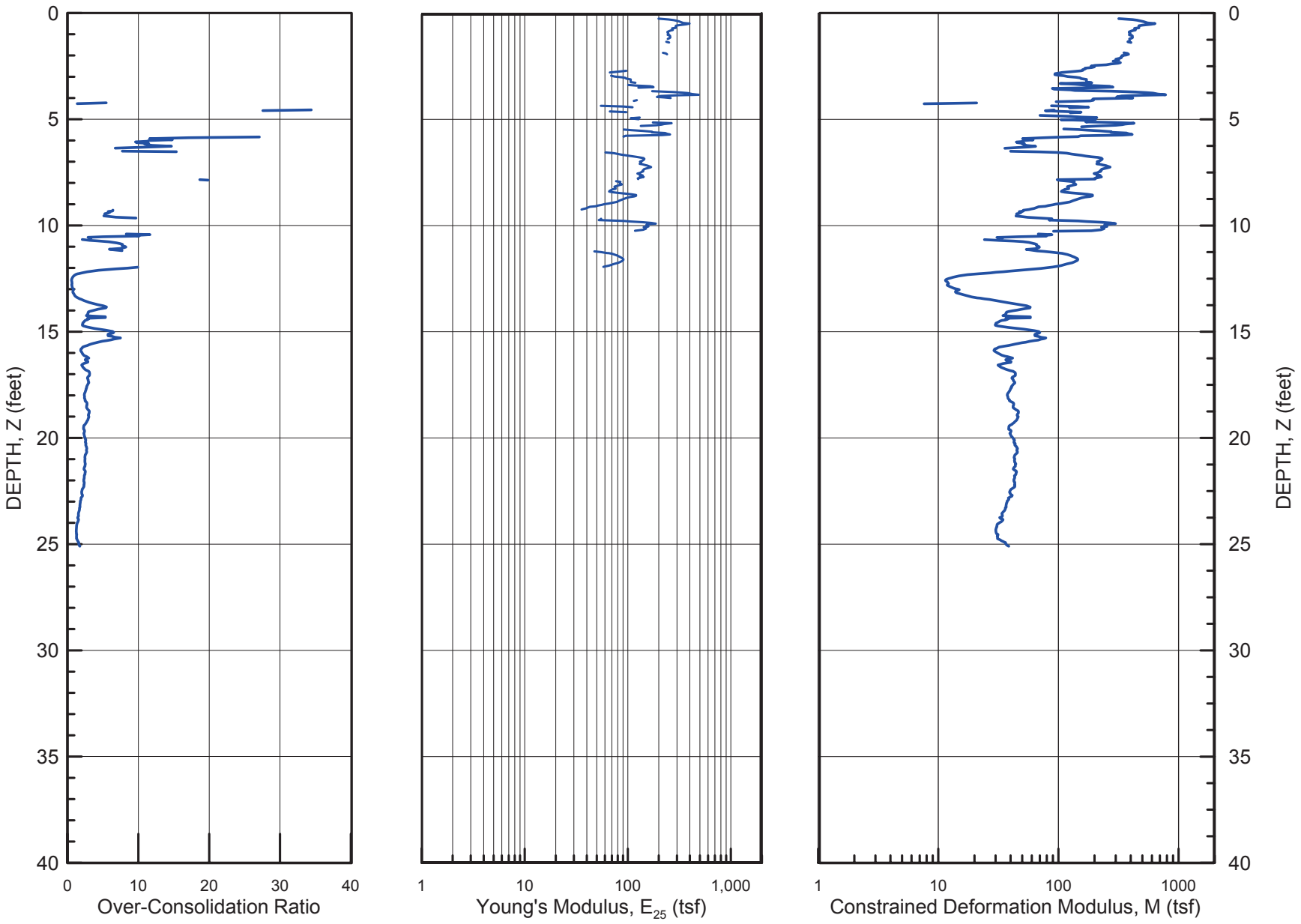
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL SHEAR STRENGTH INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-3

Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet



PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL MODULUS INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-3

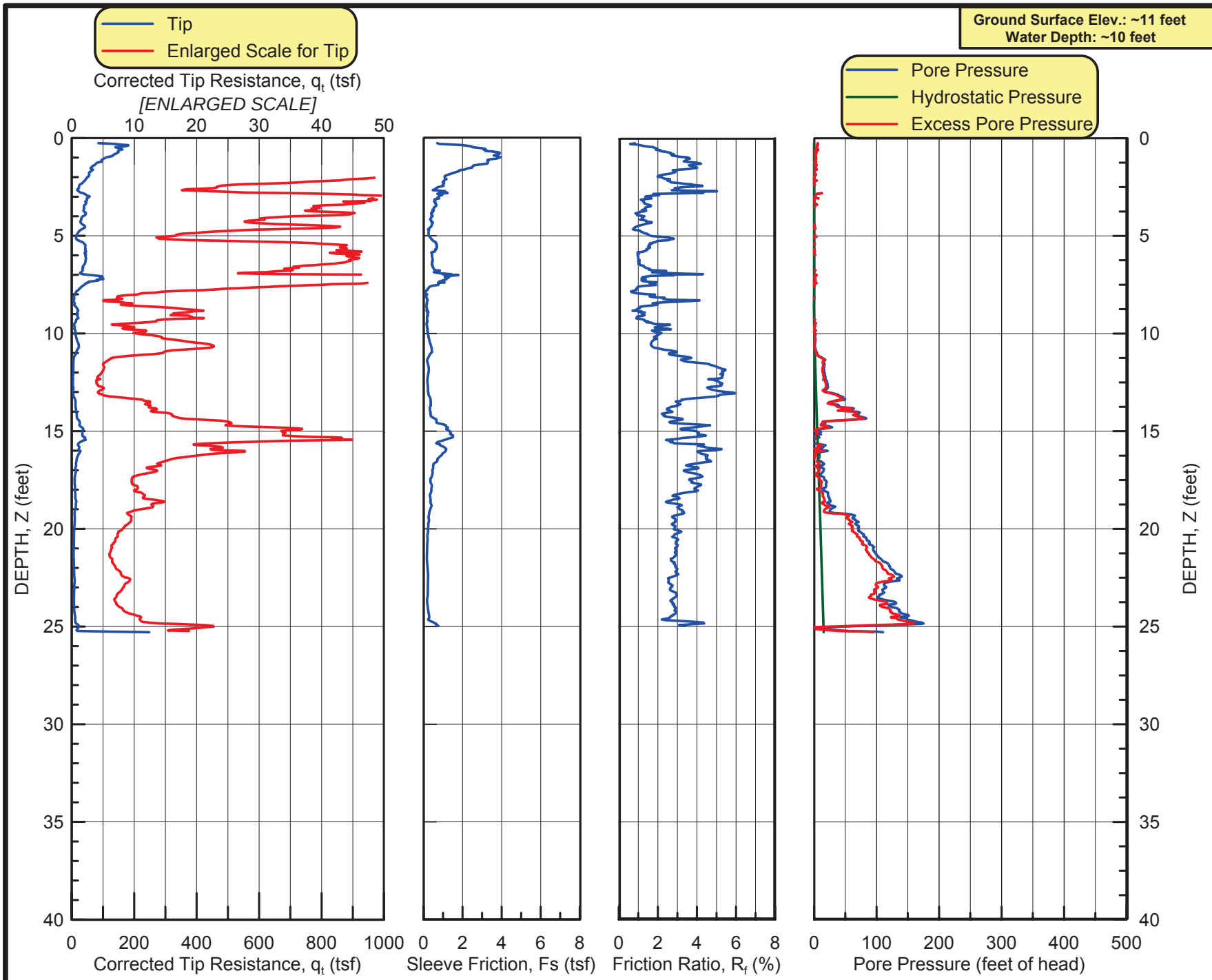
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CONE PENETROMETER TEST RESULTS

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

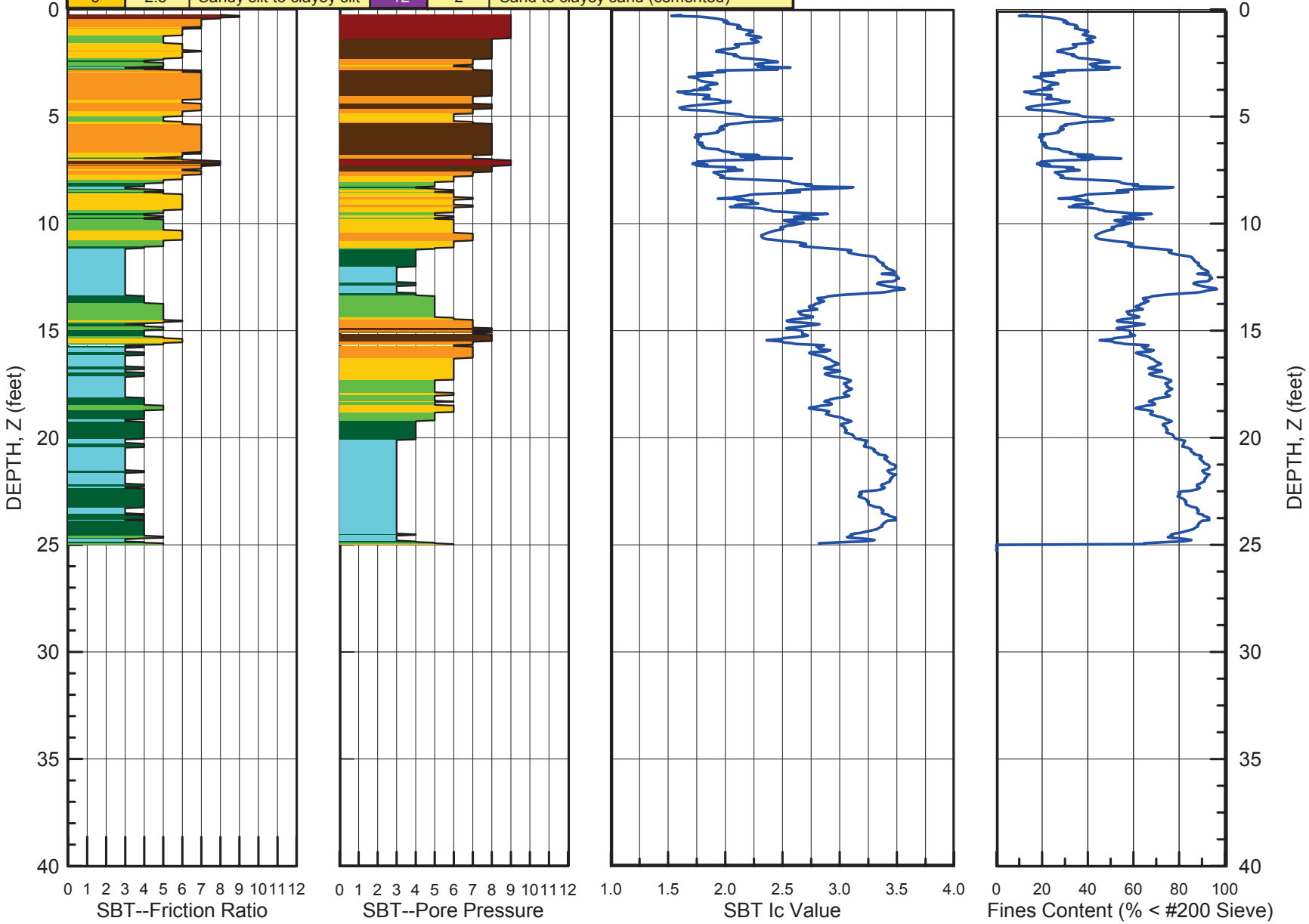
SOUNDING
CPT-4

Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet



Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)

Ground Surface Elev.: ~11 feet
Water Depth: ~ ~10 feet

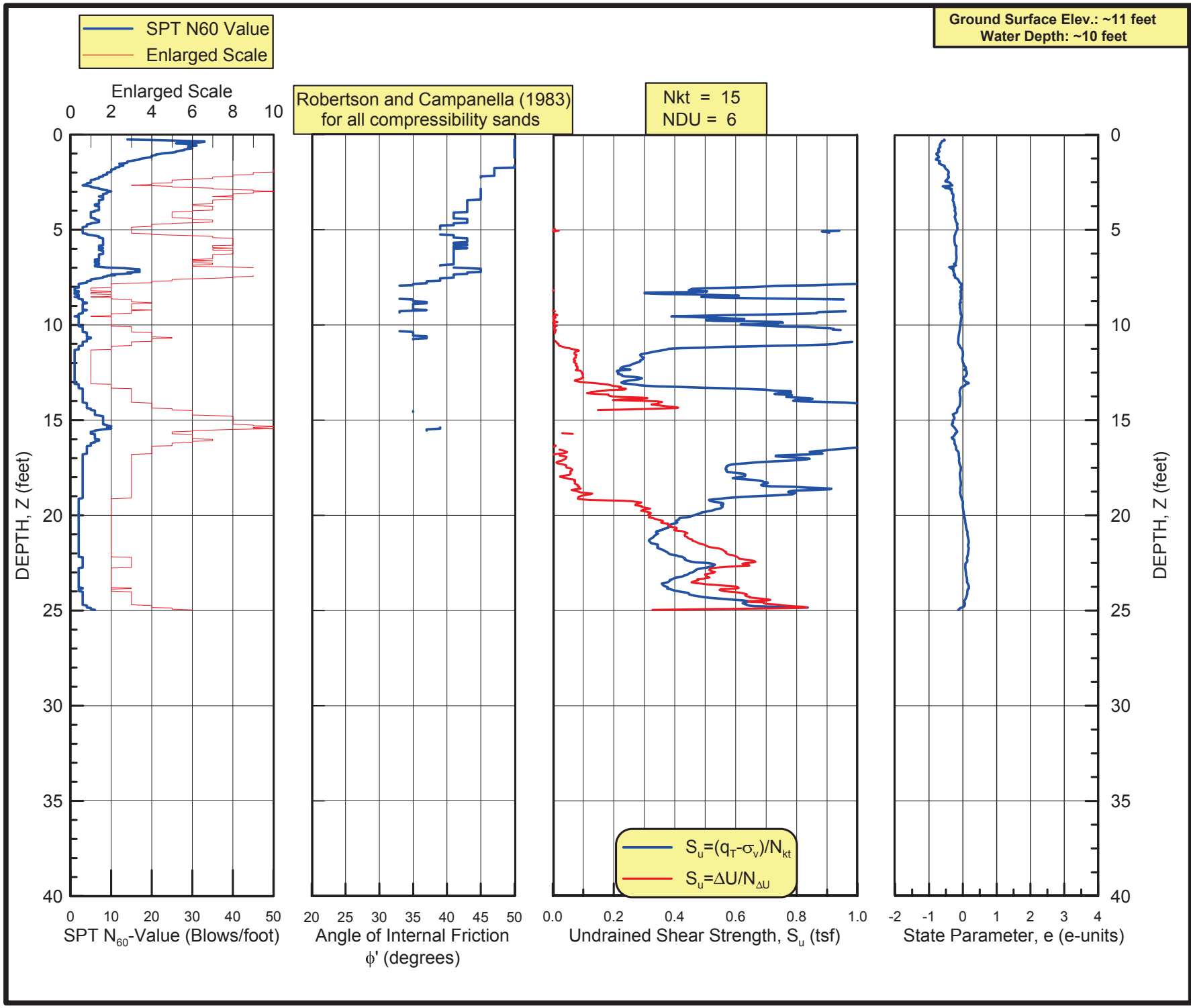


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-4



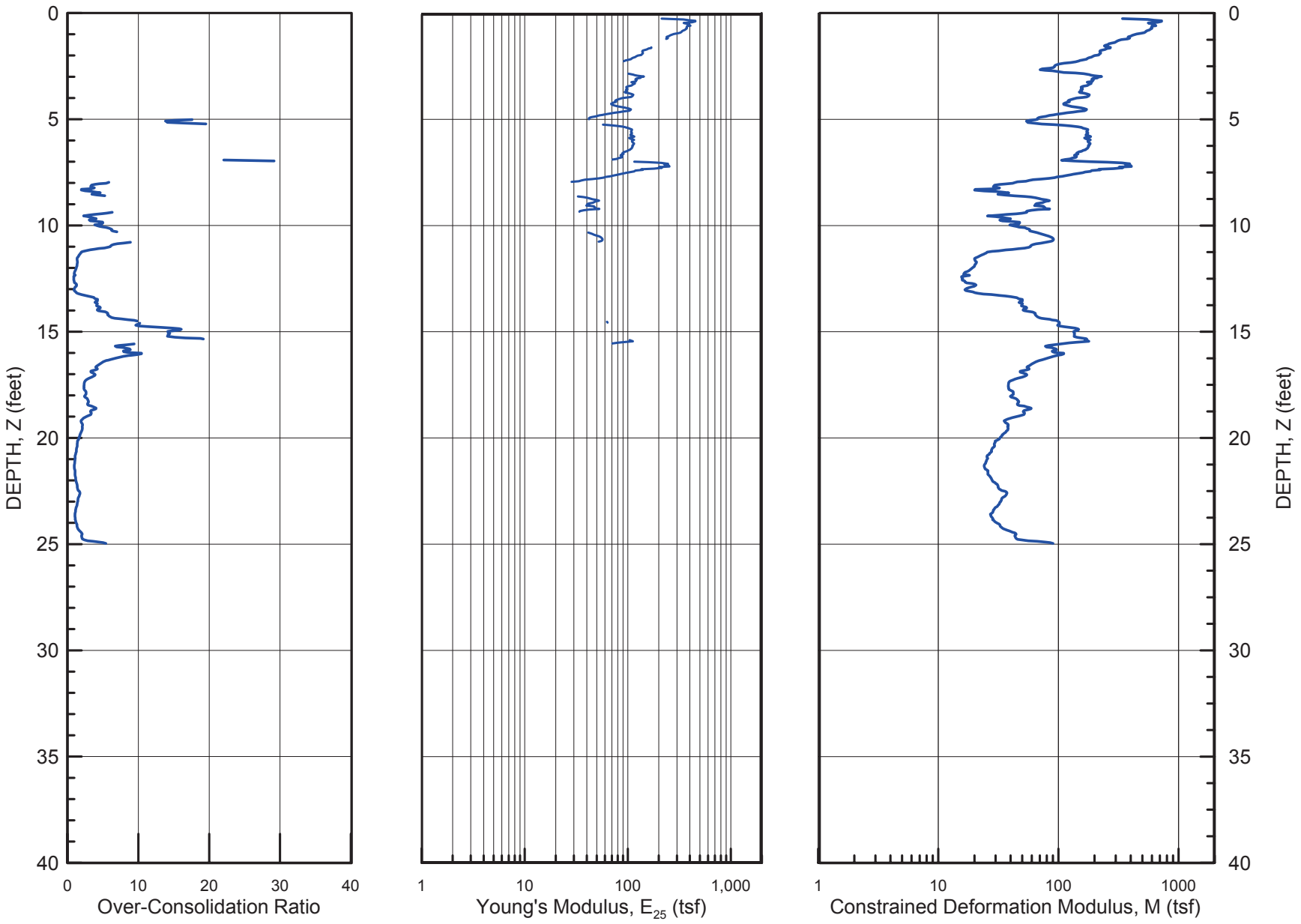
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL SHEAR STRENGTH INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-4

Ground Surface Elev.: ~11 feet
Water Depth: ~10 feet

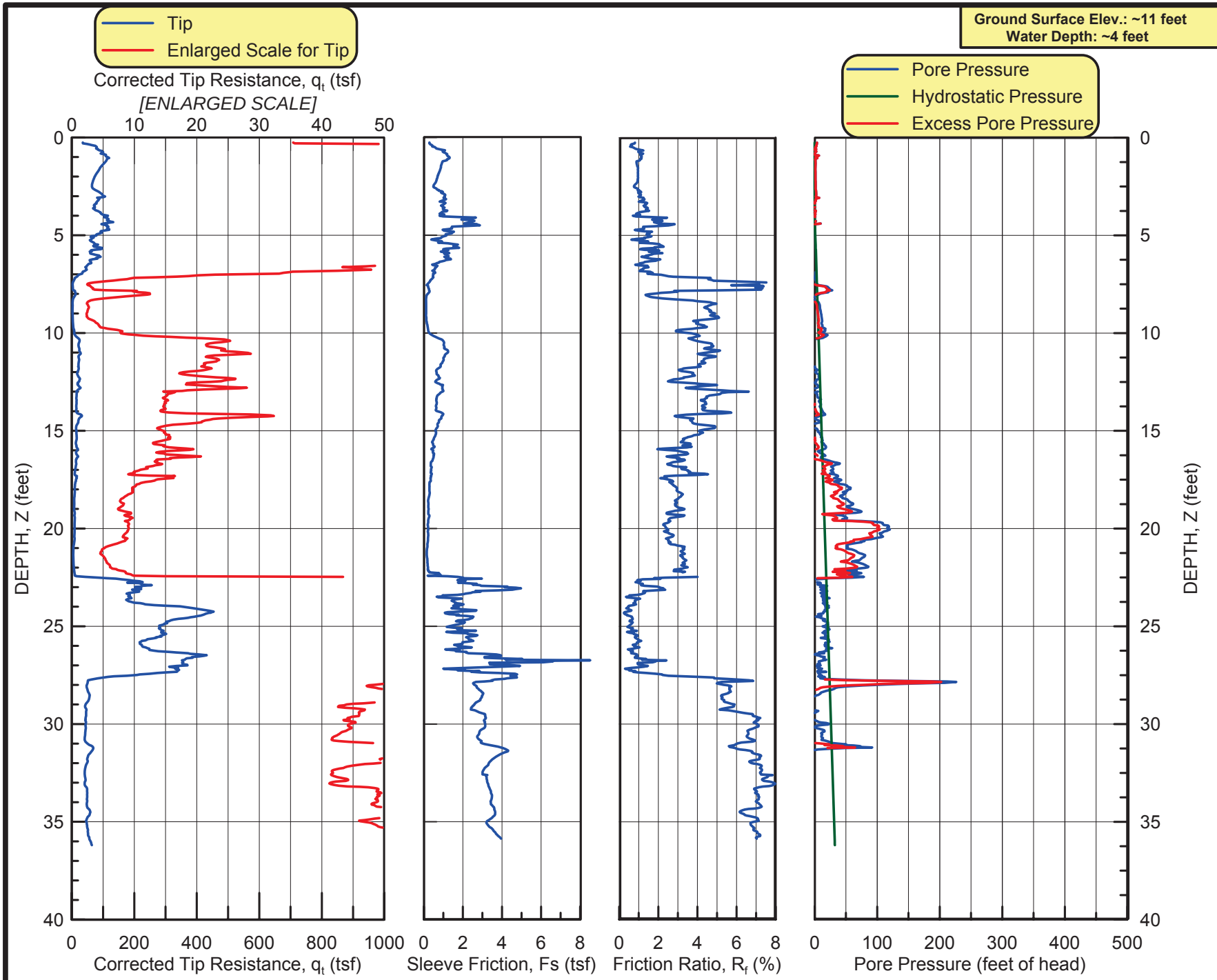


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL MODULUS INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-4



Ground Surface Elev.: ~11 feet
Water Depth: ~4 feet

PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

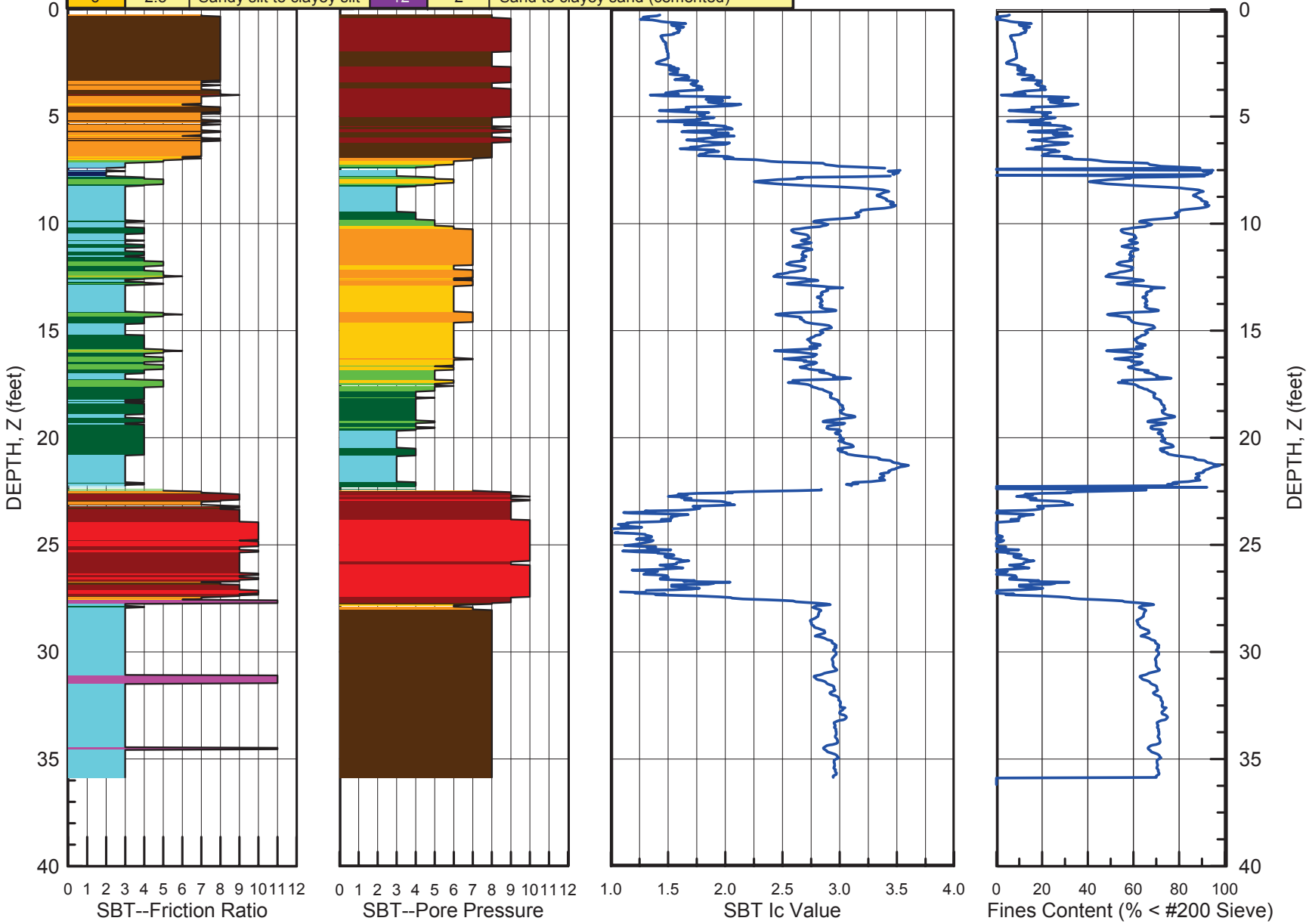
CONE PENETROMETER TEST RESULTS

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-5

Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)

Ground Surface Elev.: ~11 feet
Water Depth: ~ ~4 feet

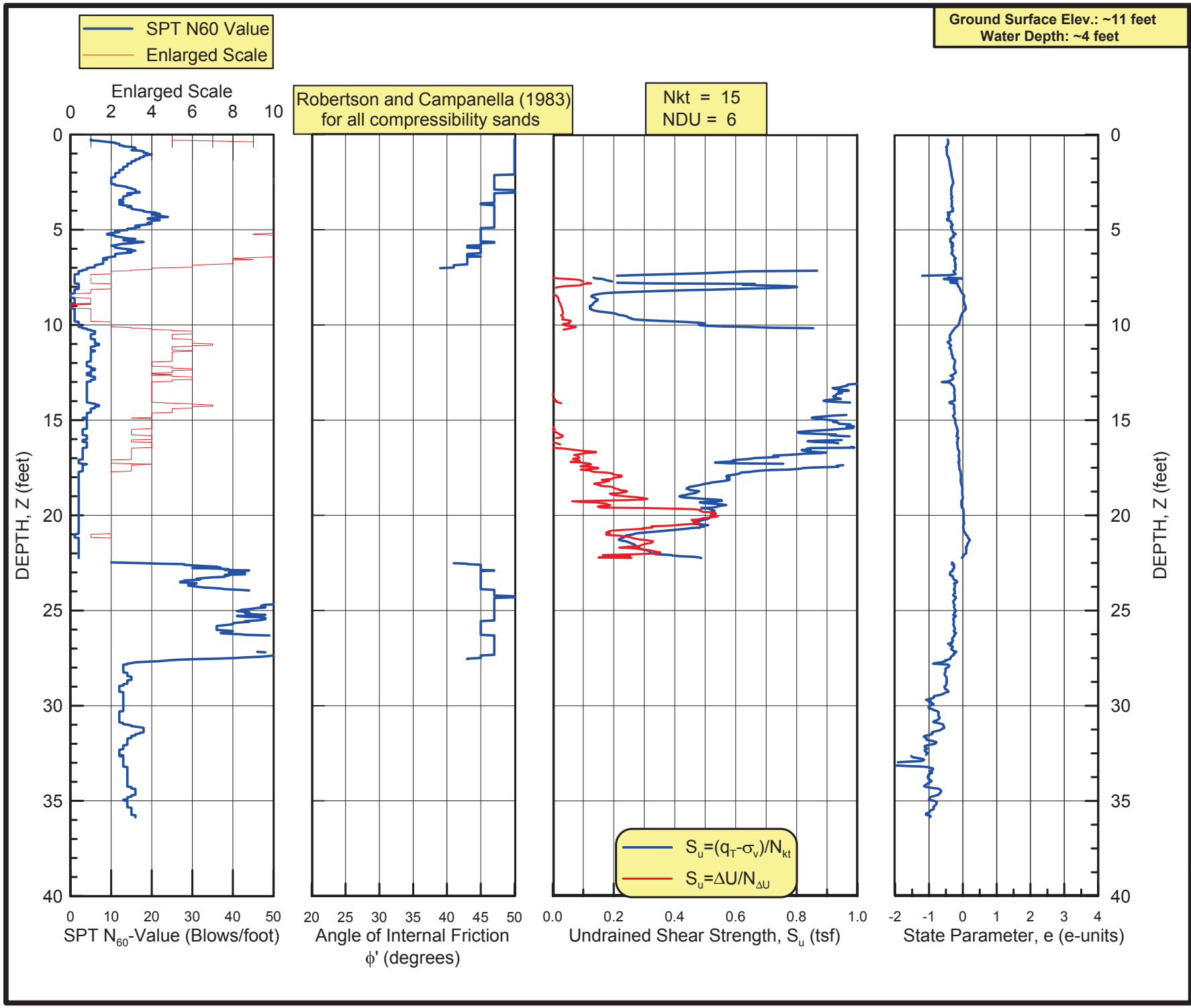


PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-5



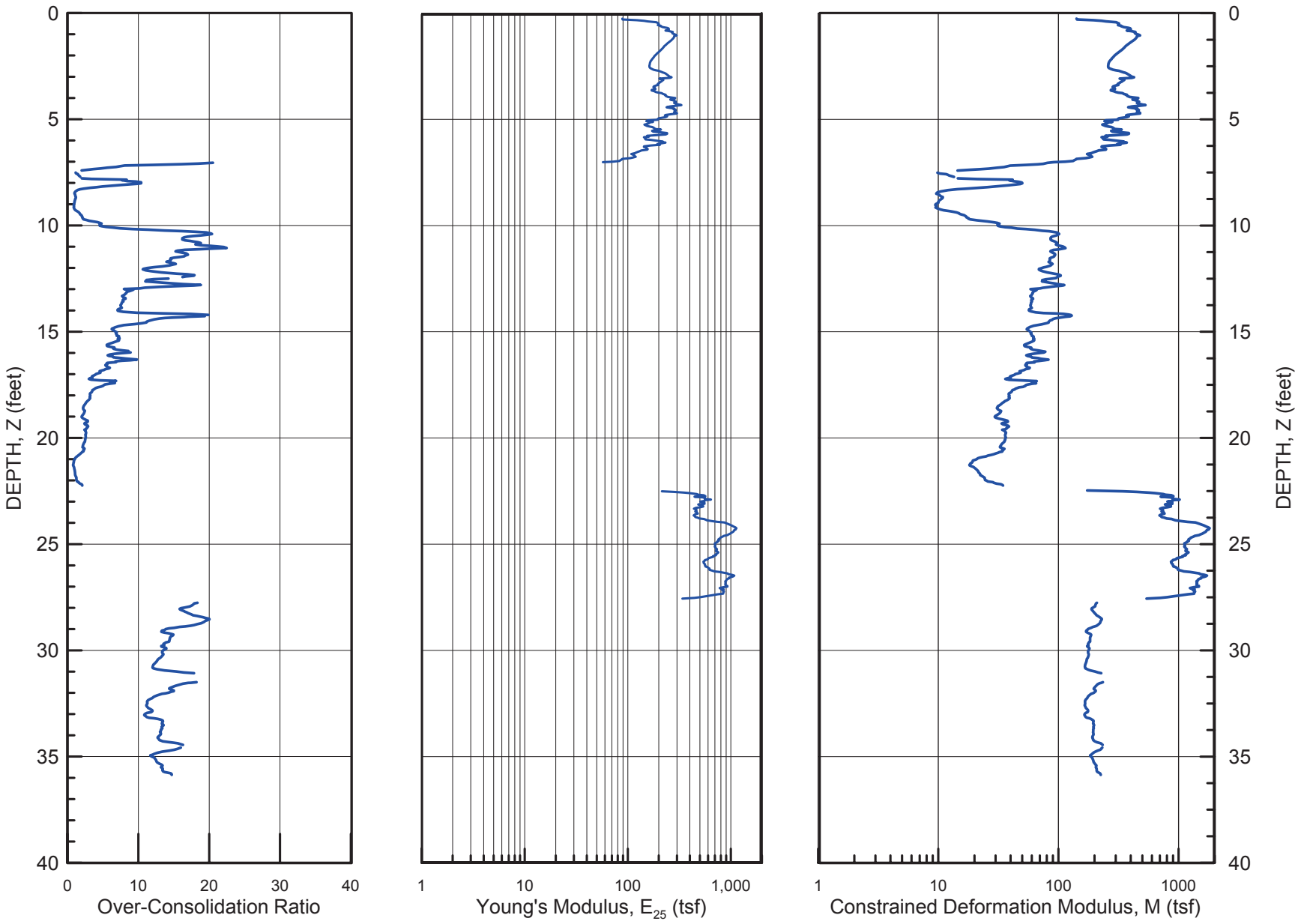
PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL SHEAR STRENGTH INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-5

Ground Surface Elev.: ~11 feet
Water Depth: ~4 feet



PROJECT: FMC Facility
LOCATION: 1701 East Patapsco Avenue Baltimore, Maryland

CPT--SOIL MODULUS INTERPRETATION

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger,P.E.,F. ASCE,D GE
SOUNDING DATE: 4/6/17

SOUNDING
CPT-5

APPENDIX B

BORING AND PIEZOMETER LOGS

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 6:00 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090CR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	6.77173 ft
		Coordinates:	North: 569361.6152 East: 1431656.02
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60		0-1' Moist, grey silty-SAND with black wood fragments 1-4.5' Mosit, compact, grey silty-CLAY with lenses of black wood and fly ash			0.1		0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
2									
3							0.9		
4									
5				4.5-5' Wet, tan, compact silty-CLAY					
6	5-10	60	47	0-47" Moist, compact, tan, orange, and grey silty-CLAY			0.0		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 6:00 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090CR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	6.77173 ft
		Coordinates:	North: 569361.6152 East: 1431656.02
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	60	0-48" Moist, compact, tan, orange and grey silty-CLAY			0.0		
12									
13									
14									
15				48-60" Wet, loose, orange-brown GRAVEL and m- to f-grained SAND			0.0		
16	15-20	60	46	0-46" Wet, loose, orange-brown GRAVEL and m- to f-grained SAND. Large quartz and k-spar clasts.			0.0		
17									
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 6:00 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090CR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	6.77173 ft
		Coordinates:	North: 569361.6152 East: 1431656.02
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	41	0-41" Wet, compact, tan to orange, f-grained SAND with sub-rounded quartz clasts at 0", 26", and 30"			0.0		
22									
23									
24									
25									
26	25-28	32	0	0" No recovery in the dual-tube due to running sands					
27									
28									
29	28-31	32	60	0-60" Wet, tan and light-orange, loose, f-grained, silica-rich SAND			0.0		
30									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 6:00 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090CR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	6.77173 ft
		Coordinates:	North: 569361.6152 East: 1431656.02
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31									
32	30-35	48	48	0-31.5" Saturated, golden-brown, f-grained, silica-rich SAND			0.0		
33									
34				31.5-48" Saturated, golden-brown, f-grained, silica-rich SAND and GRAVEL with large, angular, quartz clasts			0.0		
35									Temporary piezometer set at 35' bgs.

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/7/17 and 4/13/17	Time:	arrival: 0:00 departure: 1730
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090DR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.73065 ft
		Coordinates:	North: 569214.13 East: 1431619.43
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60		0-1' Rocks and pebbles/grass on top of dark brown to black loam and top soil with roots, sticks, and schist stones throughout 1-4' Moist, loose, golden-brown to grey, f-grained SAND with angular gravels and rocks of schist and quartzite 4-4.5' Dark black, crystaline SAND and GRAVEL 4.5-5' Stained, black to brown, silty-CLAY and f-grained SAND and black SILT with an odor					0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
6 7 8 9 10	5-10	60	0	0 No recovery in dual-tube for the 5-10' interval. Matterial is assumed to be loosely packed.					

ERM

Soil Boring Log

Job Information			
Date:	4/7/17 and 4/13/17	Time:	arrival: 0:00 departure: 1730
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090DR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.73065 ft
		Coordinates:	North: 569214.13 East: 1431619.43
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	Lithology Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	60	0-60" Moist, soft, marbled grey and tan, silty-CLAY			0.0		
12							0.0		
13							0.0		
14							0.0		
15							0.0		
16	15-20	60	41	0-13" Moist, soft, marbled grey and tan silty-CLAY			0.0		
17				13-23" Wet, golden-brown to orange-brown, f-grained SAND			0.0		
18				23-40" Wet, grey, stained, f-grained SAND			0.0		
19				40-41" Dry, grey silty-CLAY			0.0		
20									

ERM

Soil Boring Log

Job Information			
Date:	4/7/17 and 4/13/17	Time:	arrival: 0:00 departure: 1730
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090DR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.73065 ft
		Coordinates:	North: 569214.13 East: 1431619.43
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	Lithology Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	60	0-27" Dry, soft, grey silty-CLAY 27-30" Moist, brown GRAVEL			0.0		
22									
23				30-60" Dry, soft, grey, silty-CLAY			1.0		
24									
25									
26	25-28	32	47	0-21" Wet, brown to orange-brown GRAVEL and silty-SAND			0.0		
27				21-47" Moist, hard and compact, f-grained, light-tan SAND			0.0		
28									
29	28-30	24	37	0-37" Wet, compact to soft, light-tan with orange marbles stainning, f-grained SAND			0.0		
30									

ERM

Soil Boring Log

Job Information			
Date:	4/7/17 and 4/13/17	Time:	arrival: 0:00 departure: 1730
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090DR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.73065 ft
		Coordinates:	North: 569214.13 East: 1431619.43
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	60	0-60" Wet, compact to soft, light-tan with orange marbled staining, f-grained SAND			0.0		
32									
33									
34									
35									Sample refusal at 35' bgs.

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/12/17 and 4/13/17	Time:	arrival: 6:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090ER	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.9984 ft
		Coordinates:	North: 569160.1859 East: 1431641.244
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60	60	0-1' Dry, brown top soil 1-5' Dry, brown to black, f-grained SAND			0.0		0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
6 7 8 9 10	5-10	60	0	0" No recovery in fill matterial					

ERM

Soil Boring Log

Job Information			
Date:	4/12/17 and 4/13/17	Time:	arrival: 6:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090ER	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.9984 ft
		Coordinates:	North: 569160.1859 East: 1431641.244
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	60	0-5" Wet, black stained and brown, f- to m-grained SAND 5-60" Moist, grey and orange-brown silty-CLAY			0.0 0.0		
12									
13									
14									
15									
16	15-20	60	44	0-44" Moist, grey and orange-brown silty-CLAY			0.0		
17									
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/12/17 and 4/13/17	Time:	arrival: 6:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090ER	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.9984 ft
		Coordinates:	North: 569160.1859 East: 1431641.244
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21 22 23 24 25	20-25	60	60	0-60" Wet, grey and orange-brown silty-CLAY, no oder			0.0		
26 27 28 29 30	25-30	60	0	0" Sand runs up the rods					

ERM

Soil Boring Log

Job Information			
Date:	4/12/17 and 4/13/17	Time:	arrival: 6:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090ER	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.9984 ft
		Coordinates:	North: 569160.1859 East: 1431641.244
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	0	0" Sand runs up the rods					
32									
33									
34									
35									

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 7:45 departure: 16:45
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090FR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.74253 ft
		Coordinates:	North: 568988.8014 East: 1431672.012
Driller Initials:	EL/JM	Total Boring Depth:	34' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60		0-1' Rocks and grass above dark brown to black loam and top soil with roots, pieces of wood, and pebbles throughout					0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
2				1-5' Black, tar-like, shinny and stained, f-grained SAND			0.4		
3									
4									
5				4-4.5' Brick fragments and metal fragments found at the base of the hand auger			1.3		
6	5-10	60	31	0-24" Wet, grey, loose GRAVELS and silty-SAND			0.0		
7									
8				24-31" Wet, hard, black with white flecks GRAVEL and silty-CLAY			0.0		
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 7:45 departure: 16:45
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090FR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.74253 ft
		Coordinates:	North: 568988.8014 East: 1431672.012
Driller Initials:	EL/JM	Total Boring Depth:	34' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	32"	0-1" Wet, hard, black, GRAVELS and silty-CLAY 1-32" Dry, compact, marbled orang and grey, silty-CLAY			0.0 0.0		
12									
13									
14									
15									
16	15-20	60	60	0-60" Dry, compact, marbles orange and grey silty-CLAY. Rounded quartzite clasts at 45"			0.0		
17									
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 7:45 departure: 16:45
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG

Exploritory Boring Data			
Boring ID:	2090FR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.74253 ft
		Coordinates:	North: 568988.8014 East: 1431672.012
Driller Initials:	EL/JM	Total Boring Depth:	34' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-10" Dry, marbled, orange and grey, silty-CLAY			0.0		
21				10-60" Moist, soft, grey silty-CLAY with streaks of orange and tan silty-CLAY. Dark grey to black GRAVELS at 36" bgs.			0.0		
22	20-25	60	60						
23									
24									
25									
				0-50" Soft, moist, grey, silty-CLAY with dark-grey staining at 22" and 30"			0.0		
26									
27	25-30	60	60						
28									
29									
				50-60" Wet, orange GRAVEL to m-grained SAND, clasts are well-rounded			0.0		
30									

ERM

Soil Boring Log

Job Information			
Date:	4/7/2017	Time:	arrival: 7:45 departure: 16:45
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090FR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.74253 ft
		Coordinates:	North: 568988.8014 East: 1431672.012
Driller Initials:	EL/JM	Total Boring Depth:	34' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	Lithology Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	48	33	0-15" Wet, orange GRAVEL to m-grained SAND with large quartz clasts throughout			0.0		
32				15-31" Hard, dry, compact, marbles red and light-tan, silty-CLAY			0.0		
33				31-33" Hard, dry, f-grained, light-tan SAND. Refusal of duel-tubing on this material.					Temporary piezometer is installed down to 33.3' bgs.
34									Refusal at 34' bgs.
35									

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/6/2017	Time:	arrival: 7:00 departure: 16:15
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090GR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.83603 ft
		Coordinates:	North: 568875.0824 East: 1431694.957
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	60	0-1' Grass and brown top soil with roots and pieces of wood 1-4' Dry, dark brown to black, f-grained SAND and black, crystaline matterial. White quartz clasts at 1.2'. Red brick fragments at 2.0' 4-5' Dry, red, brick fragments and stained brown, f-grained SAND with golden-brown silty-CLAY			0.2 0.3		0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
2									
3									
4									
5									
6	5-10	60	25.25	0-3.5" Moist, tan to brown, silty-CLAY and GRAVEL 3.5-6" Wet, black GRAVELS with oily sheen at 5.5" 6-22" Moist, brown, silty-CLAY with sections of brick and concrete at 8", 19"and 20" 22-25.25" Wet, black stained, silty-CLAY and GRAVEL			0.0 0.3 0.0 17.1		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/6/2017	Time:	arrival: 7:00 departure: 16:15
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090GR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.83603 ft
		Coordinates:	North: 568875.0824 East: 1431694.957
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11 12 13 14 15	10-15	60	60	0-60" Wet, black, oily GRAVELS and black stained, silty-CLAY			0.0		
16 17 18 19 20	15-20	60	40	0-40" Moist, soft, grey, silty-CLAY with dark-grey to brown staining from 0-20" and sub-rounded, quartzite clasts throughout.					

ERM

Soil Boring Log

Job Information			
Date:	4/6/2017	Time:	arrival: 7:00 departure: 16:15
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090GR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.83603 ft
		Coordinates:	North: 568875.0824 East: 1431694.957
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	60	0-60" Moist, compact, tan and gery marbles silty-CLAY, with occassional GRAVELS			0.0		
22									
23									
24									
25									
26	25-30	60	60	0-57.5" Wet, soft, grey silty-CLAY . D			0.0		
27									
28									
29									
30				57.5-60" Wet, loose, red-orange, well-sorted, medium to fine grained sand			0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/6/2017	Time:	arrival: 7:00 departure: 16:15
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090GR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.83603 ft
		Coordinates:	North: 568875.0824 East: 1431694.957
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	NA	NA Sample tube gets stuck in hard-packed SAND and is removed from bore hole. A-Zone drills passed 35' bgs and samples 35-40' bgs.					
32									
33									
34									
35									
36	35-40	36	51	0-2" Wet, tan, sub-rounded, quartz GRAVELS and f-grained SAND 2-10" Wet, soft, light tan, silty-CLAY 10-29" Wet, compact but soft, golden-tan, f-grained SAND 29-32" Dry, compact, red CLAY 32-51" Wet, compact, light-tan, f-grained SAND			0.0		Depth of temporary piezometer is 36.3' bgs
37									
38							0.0		Refusal at 38' bgs.
37									
38									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time: arrival: 7:30	departure: 17:20
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090LR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.26351 ft
		Coordinates:	North: 568292.0817 East: 1431916.539
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60		0-3.5' Dry, grey and white GRAVELS and loose, brown to medium grey, f-grained SAND matrix. At 3' bgs black, dry, crystalline matterial is found.			3.0		0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
2									
3							5.7		
4				3.5-5' Moist, dark-brown, silty-CLAY with lenses of golden-brown, f-grained SAND			3.0		
5									
6	5-10	60	20	0-20" Dry, silty-SAND with black stainning at 6.5-8" and 18.5-20". Quartz GRAVELS exist throughout but are particularly clear at 13-15"			0.0		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time: arrival: 7:30	departure: 17:20
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090LR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.26351 ft
		Coordinates:	North: 568292.0817 East: 1431916.539
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	48	0-3" Moist black stainned silty-SAND 3-48" Moist, grey and orange marbled, clay-like SILT			0.0 0.0		
12									
13									
14									
15									
16	15-20	60	60	0-60" Wet, grey and orange marbled, clay-like SILT			0.0		
17									
18									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time: arrival: 7:30	departure: 17:20
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090LR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.26351 ft
		Coordinates:	North: 568292.0817 East: 1431916.539
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
19									
20									
21				0-60" Wet, grey and orange marbled, clay-like SILT			0.0		
22	20-25	60	60						
23									
24									
25									
26				0-60" Wet, grey and orange marbled silty-CLAY to clay-like SILT and grey and orange SAND veins throughout			0.0		
27	25-30	60	60						
28									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time: arrival: 7:30	departure: 17:20
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2090LR	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Augers	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.26351 ft
		Coordinates:	North: 568292.0817 East: 1431916.539
Driller Initials:	EL/JM	Total Boring Depth:	38' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
29									
30									
31				0-52" Wet, grey, silty-CLAY			0.0		
32	30-35	60	60						
33									
34									
35				52-60" Wet, orange-brown, compact, f-grained SAND			0.0		Temporary piezometer set at 34.5' bgs.
36				0-10" Wet, orange-brown, compact, f-grained SAND and quartz-rich GRAVELS			0.0		
37									
38	35-40	60	10						Refusal at 38' bgs.
39									
40									

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091A1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	16.96709 ft
		Coordinates:	North: 568427.9229 East: 1433063.771
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60	60	0-3.5' Dry, grass and quartz GRAVELS with loosely packed, f-grained, brown SAND. GRAVEL has sulfur-like odor and green color (reducing conditions). 3.5-5' Soft, moist, grey silty-CLAY with lenses of golden-brown silty-CLAY					0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
6 7 8 9 10	5-10	60	57	0-25" Saturated, grey SILT 25-57" Dry, hard, compact, orange-brown and grey, f-grained SAND to SILT			0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091A1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	16.96709 ft
		Coordinates:	North: 568427.9229 East: 1433063.771
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	44	0-38" Moist, compact, brown silty-CLAY			0.0		
12									
13				38-44" Moist to dry, f-grained, grey SAND. Compact from 41-44"			0.0		
14									
15									
16	15-20	60	39.5	0-20" Moist, compact, grey with orange, f- to m-grainned SAND. Wet from 12-20".					
17				20-39.5" Wet, black, f- to m-grained SAND with quartz GRAVELS					
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091A1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	16.96709 ft
		Coordinates:	North: 568427.9229 East: 1433063.771
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	60	0-4" Saturated, grey, f- to m-grainned SAND and quartz-rich GRAVEL 4-60" Saturated, grey, silty-CLAY			0.0		
22									
23									
24									
25									
26	25-30	60	60	0-27" Moist, orange and grey marbled silty-CLAY			0.0		
27									
28				27-43" Wet, grey and brown marbled silty-CLAY			0.0		
29				43-60" Wet, soft, grey silty-CLAY			0.0		
30									

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091A1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	16.96709 ft
		Coordinates:	North: 568427.9229 East: 1433063.771
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	60	0-17" Wet, soft, grey silty-CLAY			0.0		
32				17-60" Moist, compact, dark-grey silty-CLAY			0.0		
33									
34									
35									
36	35-40	60	60	0-60" Moist, compact, dark-grey silty-CLAY			0.0		Temporary piezometer set at 35' bgs.
37									
38									
39									
40									

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091B1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	13.32886 ft
		Coordinates:	North: 568530.2262 East: 1432820.601
Driller Initials:	EL/JM	Total Boring Depth:	45' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60	60	0-0.25' Asphalt pavement 0.25-3.5' Dry, grey to brown, f-grained SAND 3.5-5' Moist, soft, grey, silty-CLAY with black flakes of hard, crystalline matterial. At 4' bgs, black staining with earthy odor present. PID reading from matterial is 0.8 ppm. PID reading down the bore hole is 11.2 ppm. At 5' bgs silty-CLAY is stained and wet			0.8		0-5' bgs were hand cleared in accordence with ERMs subsurface clearence protocols.
6 7 8 9 10	5-10	60	47	0-23" Wet, dark to light grey silty-CLAY with distinct sewage-like odor 23-47" Moist, compact, orange and grey silty-CLAY with veins of grey SILT			0.8		

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091B1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	13.32886 ft
		Coordinates:	North: 568530.2262 East: 1432820.601
Driller Initials:	EL/JM	Total Boring Depth:	45' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-3" Moist, compact, orange and grey, silty-CLAY with veins of grey, f-grained SAND			0.0		
11				3-25" Grey (3-14") to orange (14-25"), moist, f-grainned, quartz-rich SAND			0.0		
12	10-15	60	44	25-36" Wet, grey to black, f-grainned, quartz-rich SAND					
13				36-44" Moist, brown with black stains, f-grained SAND			0.0		
14									
15									
16				0-29" Wet, dark grey to brown, f-grained SAND			0.0		
17									
18	15-20	60	60	29-38" Soft, moist, grey and orange marbled silty-CLAY			0.0		
19				38-60" Hard, compact, moist, grey and orange, marbled, silty-CLAY			0.0		
20									

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091B1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	13.32886 ft
		Coordinates:	North: 568530.2262 East: 1432820.601
Driller Initials:	EL/JM	Total Boring Depth:	45' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21 22 23 24 25	20-25	60	60	0-60" Hard, compact, moist, grey and orange, marbled, silty-CLAY			0.0		
26 27 28 29 30	25-30	60	60	0-60" Hard, compact, moist, grey and orange, marbled, silty-CLAY			0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091B1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	13.32886 ft
		Coordinates:	North: 568530.2262 East: 1432820.601
Driller Initials:	EL/JM	Total Boring Depth:	45' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	60	0-60" Compact, moist, dark grey silty-CLAY			0.0		
32									
33									
34									
35									
36	35-40	60	60	0-60" Wet, compact, dark grey silty-CLAY			0.0		
37									
38									
39									
40									

ERM

Soil Boring Log

Job Information			
Date:	4/18/2017	Time:	arrival: 6:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploritory Boring Data			
Boring ID:	2091B1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	13.32886 ft
		Coordinates:	North: 568530.2262 East: 1432820.601
Driller Initials:	EL/JM	Total Boring Depth:	45' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-3" Soft, moist, grey silty-CLAY			0.0		
				3-26" Dry, hard, compact, brown to golden brown, f-grained SAND and SILT			0.0		
41									
42	35-40	60	26						Well is set at 41.6' bgs.
43									
44									
45									

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time:	arrival: 8:00 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploratory Boring Data			
Boring ID:	2091E1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.68456 ft
		Coordinates:	North: 568291.9116 East: 1432417.118
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	60	0-0.25' Asphalt pavement 0.25-3' Moist, dark-brown, silty-CLAY with road GRAVEL. Silty-CLAY has lenses of golden-brown and red silty-CLAY. 3-4' Concrete found at 3' bgs. Moist, soft, dark to purple-brown, silty-CLAY with golden-brown, f-grained SAND 4-4.75' Dry, golden-brown, f-grained SAND with lenses of dark to purple-brown silty-CLAY with red staining. 4.75-5' Concrete was found at 4.75' bgs. A-Zone was able to push through the concrete with the Geoprobe. CLAY and SAND continue under the piece of concrete at 5' bgs.					0-5' bgs were hand cleared in accordance with ERM's subsurface clearance protocols.
2									
3									
4									
5							0.1		
6	5-10	60	30	0-18" Wet, grey-brown silty CLAY			0.3		
7				18-28" Moist, brown, soft, silty-CLAY			0.2		
8				28-30" Wet, black, hard silty-CLAY with sewage-like odor			2.3		
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time:	arrival: 8:00 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploratory Boring Data			
Boring ID:	2091E1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.68456 ft
		Coordinates:	North: 568291.9116 East: 1432417.118
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	37	0-12" Wet, black, sewage odor, silty-SAND 12-37" Wet, grey, silty-SAND to SILT			0.8 0.5		
12									
13									
14									
15									
16	15-20	60	39	0-3" Wet, grey SILT 3-39" Moist, grey silty-CLAY with black staining at 21-22" and orange-brown marbling at 36-39"			0.0		
17									
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time:	arrival: 8:00 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploratory Boring Data			
Boring ID:	2091E1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.68456 ft
		Coordinates:	North: 568291.9116 East: 1432417.118
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21 22 23 24 25	20-25	60	60	0-60" Wet, grey and orange marbled silty-CLAY			0.0		
26 27 28 29 30	25-30	60	55	0-55" Wet, mushy, homogenous grey silty-CLAY			0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/17/2017	Time:	arrival: 8:00 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Exploratory Boring Data			
Boring ID:	2091E1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.68456 ft
		Coordinates:	North: 568291.9116 East: 1432417.118
Driller Initials:	EL/JM	Total Boring Depth:	40' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-35	60	60	0-60" Wet, mushy, homogenous grey silty-CLAY	silty-CLAY		0.0		
32									
33									
34									
35									
36	35-40	60	60	0-5" Wet, mushy, homogenous grey silty-CLAY 5-23" Wet, m-grained, grey stained SAND	silty-CLAY		0.0 0.0		
37				23-49" Wet, orange-brown, compact, f-grained to m-grained SAND			0.0		
38									
39									
40				49-60" Wet, black to grey stained SILT and GRAVEL with aromatic odor			0.3		

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 16:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.23128 ft
		Coordinates:	North: 569041.8992 East: 1431656.372
Driller Initials:	EL/JM	Total Boring Depth:	36' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60	32	0-4" Soft, brown top soil with grass, leaves, and root system throughout 4-32" Dry, hard silty- to f-grained SAND with large quartzite and schist clasts throughout			1.4		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
6 7 8 9 10	5-10	60	24	0-24" Soft, wet, dark-brown to black SAND and silty-CLAy with oily sheen and saturated matterial from 8-12"			2.0	TP-1 (8")	

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Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 16:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.23128 ft
		Coordinates:	North: 569041.8992 East: 1431656.372
Driller Initials:	EL/JM	Total Boring Depth:	36' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-3" Soft, wet, black, f-grained SAND with oily sheen and aromatic odor			4.1		
11				3-27.5" Soft, moist, grey and orange marbled silty-CLAY			0.7	TP-1 (11")	
12	10-15	60	27.5				1.4		
13									
14									
15									
				0-60" Soft, moist, grey and orange marbled silty-CLAY			0.0		
16									
17	15-20	60	60						
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 16:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.23128 ft
		Coordinates:	North: 569041.8992 East: 1431656.372
Driller Initials:	EL/JM	Total Boring Depth:	36' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	60	0-34" Moist, soft, grey, silty-CLAY with occasional lenses and veins of hard, orange, silty-CLAY			0.0		
22									
23				34-60" Moist, soft, grey, silty-CLAY with orange silty-SAND and dark-grey reflective stainning			0.0		
24									
25									
26	25-30	60	54	0-37" Most, soft, grey silty-CLAY			0.0		
27									
28									
29				37-54" Wet, orange, m-grained SAND with angular schist GRAVEL			0.0		
30									

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Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 16:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-1	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	10.23128 ft
		Coordinates:	North: 569041.8992 East: 1431656.372
Driller Initials:	EL/JM	Total Boring Depth:	36' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31	30-34	48	41	0-23" Wet, orange, f-grained SAND and sub-angular GRAVEL	silty-SAND	CLAY	0.5		
32				23-41" Hard, dry, compact red CLAY with white veins	silty-CLAY		0.0		Temporary piezometer is installed at 30.5' bgs.
33									
34									
35	34-36	24	28	0-28" Hard, dry, compact red CLAY with white CLAY veins			0.0		
36									Refusal at 36' bgs.

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2a	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.17661 ft
		Coordinates:	North: 569066.5408 East: 1431637.42
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	37	0-14" Dry, compact, dark-brown silty-SAND, top soil 14-37" Moist, black, silty-CLAY with aromatic odor			0.2 16.2		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
2									
3									
4									
5									
6	5-10	60	29	0-13" Moist, compact, black silty-CLAY 13-29" Wet, oily, brown to black silty-CLAY with petroleum-like odor and red brick GRAVEL from 25-27"			6.2 0.4 0.0		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:00
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2a	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.17661 ft
		Coordinates:	North: 569066.5408 East: 1431637.42
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	27	0-7" Wet, oily, black silty-CLAY with petroleum oder 7-27" Moist, soft grey to tan silty-CLAY			9.5 0.0		
12									
13									
14									
15									
16	15-16	12	18	0-14" Moist, soft, grey to tan, silty-CLAY 14-18" Wet, grey, m-grained SAND			0.0 0.0		Bottom of temporary piezometer at 15.9' bgs.

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.32508 ft
		Coordinates:	North: 569062.1534 East: 1431639.022
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	45	0-20" Dry, dark-brown, f-grained SAND with brick fragments and angular quartzite and schist GRAVELS			0.0		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
2				20-45" Moist, black stained silty-CLAY					
3							11.1		
4							16.5		
5							5.8		
6	5-10	60	24	0-6" Moist, black stained silty-CLAY and m-grained SAND and GRAVEL			0.1		
7				6-24" Wet, black-stained silty-CLAY and m-grained SAND and GRAVEL			0.1		
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.32508 ft
		Coordinates:	North: 569062.1534 East: 1431639.022
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-8" Wet, black-stained, silty-CLAY, SAND, and GRAVEL with oily sheen			0.3		
11				8-25" Moist, grey, soft silty-CLAY			0.3		
12	10-15	60	25						
13									
14									
15									
				0-9" Soft, grey silty-CLAY with black staining from 3-5" and m- to f-grain SAND throughout			0.3		
16				9-37" Compact, orange and grey silty-CLAY			0.0		
17	15-20	60	37						
18									
19									
20									

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.32508 ft
		Coordinates:	North: 569062.1534 East: 1431639.022
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	60	0-60" Soft, grey and orange silty-CLAY			0.0		
22									
23									
24									
25									
26	25-30	60	60	0-41" Wet, soft, grey silty-CLAY			0.0		
27									
28									
29				41-60" Wet, m-grained, red SAND			0.0		
30									

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Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-2b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.32508 ft
		Coordinates:	North: 569062.1534 East: 1431639.022
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifier color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-11" Wet, m-grained sand to quartz-rich GRAVEL			0.0		
31				11-35" Hard, dry, red and white CLAY			0.0		
32	30-35	60	35"						
33									
34									
35									

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time:	arrival: 7:20 departure: 15:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3a	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.45925 ft
		Coordinates:	North: 569103.9866 East: 1431652.281
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	24	0-19.5" Dry, brown, silty-CLAY with quartzite and schist clasts, brick and black staining			0.0		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
2				19.5-24" Moist, black stained, brown silty-CLAY			1.4		
3							0.7		
4									
5									
6	5-10	60	23	0-4" Moist, black to brown silty-CLAY 4-8" Moist, tan silty-CLAY 8-23" Wet, black silty-CLAY with oily sheen from 21-23" and red-orange stainning at 19"			0.3 0.0 0.0		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time:	arrival: 7:20 departure: 15:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3a	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.45925 ft
		Coordinates:	North: 569103.9866 East: 1431652.281
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	35	0-6" Moist, grey, m-grained SAND 6-29" Moist, grey and tan marbled silty-SAND			0.0 0.0		
12									
13				29-35" Moist, grey, silty-CLAY			0.0		
14									
15									
16	15-16	12	0	0" No recovery from 15-16' bgs					Temporary piezometer places at 15.9' bgs

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time:	arrival: 6:00 departure: 17:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Auger	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.44176 ft
		Coordinates:	North: 569103.1984 East: 1431648.34
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	23	0-12" Dry, dark-brown silty-SAND, topsoil with quartzite and schist clasts 12-23" Moist, soft, black and dark-brown, granular GRAVEL			0.7 0.0		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
2									
3									
4									
5									
6	5-10	60	20	0-1" Moist, black to dark-brown, granular GRAVEL 1-7" Wet, tan, silty-CLAY with lenses of orange-tan, f-grained SAND 7-20" Wet, black, oily, aromatic odor GRAVEL to coarse-grainned SAND			0.0 0.0 0.1		
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time: arrival: 6:00	departure: 17:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Auger	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.44176 ft
		Coordinates:	North: 569103.1984 East: 1431648.34
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11 12 13 14 15	10-15	60	15	0-1" Wet, black, oily with aromatic odor, GRAVEL and coarse-grained SAND 1-10" Wet, grey, f-grained SAND with wood fragments from 5-7" 10-15" Moist, tan, silty-CLAY					
16 17 18 19 20	15-20	60	60	0-60" Moist, gery and tan, silty-CLAY with orange-brown, f-grained SAND lenses			0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time: arrival: 6:00	departure: 17:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Auger	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.44176 ft
		Coordinates:	North: 569103.1984 East: 1431648.34
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21 22 23 24 25	20-25	60	60	0-60" Moist, grey and tan, silty-CLAY with orange-brown, f-grained SAND lenses			0.0		
26 27 28 29 30	25-30	60	60	0-13" Moist to wet, grey, silty-CLAY 13-56" Saturated, orange, SILT and quartz-rich GRAVEL 56-60" Moist, red CLAY with white CLAY lenses			0.0 0.0		

ERM

Soil Boring Log

Job Information			
Date:	4/12/2017	Time:	arrival: 6:00 departure: 17:22
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-3b	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Auger	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	9.44176 ft
		Coordinates:	North: 569103.1984 East: 1431648.34
Driller Initials:	EL/JM	Total Boring Depth:	35' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
31 32 33 34	30-34	48	60	0-60" Moist, red and light grey marbled CLAY			0.0		
35	34-35	12	2.3	0-2.3" Moist, red and light grey marbled CLAY			0.0		

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-4	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.80722 ft
		Coordinates:	North: 569100.6599 East: 1431627.139
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	28	0-26" Dry, dark-brown, silty-SAND with quartzite and schist clasts			0.6		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
2									
3				26-28" Dry, red, brick fragments from fill matterial			0.0		
4									
5									
6	5-10	60	0	0" No recovery from 5-10', likely due to loose fill matterial					
7									
8									
9									
10									

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-4	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.80722 ft
		Coordinates:	North: 569100.6599 East: 1431627.139
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	Lithology Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
				0-3" Moist, red, brick fragments, GRAVEL and concrete			0.0		
11				3-14" Wet, yellow-tan and grey m- to f-grainned SAND					
12	10-15	60	14						
13									
14									
15				0-6" Wet, tan and grey to m- to f-grained SAND with dark grey oily material with gasoline-like odor			0.0		
16	15-16	12	16	6-16" Moist, tan and grey marbles, silty-CLAY			0.0		

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/10/2017	Time:	arrival: 7:30 departure: 17:30
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	TP-5	Boring Use:	Temporary Piezometer
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	8.79613 ft
		Coordinates:	North: 569121.3515 East: 1431631.057
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1 2 3 4 5	0-5	60	14	0-14" Dry, brown to black silty-SAND with GRAVELS from the topsoil on top			0.1		A written SSC exemption was granted in order to direct push sample from 0-5' bgs.
6 7 8 9 10	5-10	60	15	0-12" Dry, black silty-SAND with a slight sheen to material in sunlight 12-13.5" Wet, tan, coarse-grained, silty-SAND with oily residue 13.5-15" Wet, tan, coarse SAND with oily residue			0.1 0.0 0.0		

ERM

Soil Boring Log

Job Information					
Date:	4/10/2017	Time:	arrival: 7:30	departure: 17:30	
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916		
Location:	Baltimore, MD	Consultant Initials:	SG		
Hydrocarbon Investigation Boring Data					
Boring ID:	TP-5	Boring Use:	Temporary Piezometer		
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler		
Driller Company:	A-Zone Environmental	Ground Elevation:	8.79613 ft		
		Coordinates:	North: 569121.3515	East: 1431631.057	
Driller Initials:	EL/JM	Total Boring Depth:	16' bgs		

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	Temporary Well Placement	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11	10-15	60	17	0-2" Wet, oily, tan, coarse SAND 2-17" Moist, grey silty-CLAY			0.0 0.1		
12									
13									
14									
15									
16	15-16	12	13	0-13" Moist, grey and orange-brown silty-CLAY			0.0		

silty-SAND

SAND

silty-CLAY

CLAY

ERM

Soil Boring Log

Job Information			
Date:	4/14/2017	Time:	arrival: 7:30 departure: 16:50
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	L22	Boring Use:	Exploritory Boring
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	NA
Driller Initials:	EL/JM	Total Boring Depth:	30' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
1	0-5	60	32	0-12" Dry, brown, silty-SAND top soil with pants and quartzite GRAVELS		0		
2				12-14.5" Moist, brown, silty-CLAY 14.5-18" Dry, yellow-brown, f-grain SAND, compact with a vein of brown SILT		0 0.6		
3				18-32" Moist, hard, compact, black clay-like SILT with gasoline-like odor				
4								
5								
6	5-10	60	27	0-4" Moist, hard, granular, black, clay-like SILT 4-27" Wet, brown to black, clay-like SILT		0.3 0.1		
7								
8								
9								
10								

ERM

Soil Boring Log

Job Information			
Date:	4/14/2017	Time:	arrival: 7:30 departure: 16:50
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	L22	Boring Use:	Exploritory Boring
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	NA
Driller Initials:	EL/JM	Total Boring Depth:	30' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
11 12 13 14 15	10-15	60	16	0-2.5" Wet, brown, clay-like SILT with angular quartz clasts at 2.3-2.5" 2.5-16" Moist, brown-orange and grey marbled, silty-CLAY		0		
16 17 18 19 20	15-20	60	14	0-14" Moist, brown-orange and grey marbled, silty-CLAY		0		

ERM

Soil Boring Log

Job Information			
Date:	4/14/2017	Time:	arrival: 7:30 departure: 16:50
Proj. Name:	FMC Baltimore Pre-Design	Project Number:	0399916
Location:	Baltimore, MD	Consultant Initials:	SG
Hydrocarbon Investigation Boring Data			
Boring ID:	L22	Boring Use:	Exploritory Boring
Drilling Method:	Geoprobe 7822 - Direct Push	Sampling Method:	Macrocore Duel-Tube Sampler
Driller Company:	A-Zone Environmental	Ground Elevation:	NA
Driller Initials:	EL/JM	Total Boring Depth:	30' bgs

Depth (ft)	Sample Interval	Penetration (in)	Recovery (in)	**Lithology** Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	Geologic Symbol	VOC Reading (ppm)	Phase Separation Science Laboratory Sample ID	Comment
21	20-25	60	21	0-21" Wet to saturated, golden to orange-brown, f-grainned SAND mixed with GRAVELS		0		
22								
23								
24								
25								
26	25-30	60	0	0" Running sands				
27								
28								
29								
30								Refusal at 30' bgs on hard red CLAY

silty-SAND

SAND

silty-CLAY

CLAY

APPENDIX C

LABORATORY REPORTS FOR WATER QUALITY

Analytical Report for

ERM, Inc. - Annapolis

Certificate of Analysis No.: 17042603

Project Manager: Lindsey France
Project Name : FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID : 0399916

May 3, 2017

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

May 3, 2017

Lindsey France
ERM, Inc. - Annapolis
180 Admiral Cochrane Drive Suite 400
Annapolis, MD 21401

Reference: PSS Work Order(s) No: **17042603**
Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID.: 0399916

Dear Lindsey France :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **17042603**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on May 31, 2017, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: ERM, Inc. - Annapolis

Project Name: FMC Baltimore Pre Design

Work Order Number(s): 17042603

Project ID: 0399916

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/26/2017 at 10:45 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
17042603-001	EB-1 (042517)	WATER	04/25/17 09:32
17042603-002	2090 C	GROUND WATER	04/25/17 09:41
17042603-003	2090 D	GROUND WATER	04/25/17 09:53
17042603-004	2090 E	GROUND WATER	04/25/17 10:07
17042603-005	2090 F	GROUND WATER	04/25/17 10:21
17042603-006	2090 G	GROUND WATER	04/25/17 10:51
17042603-007	2090 L	GROUND WATER	04/25/17 11:03
17042603-008	2091 E1	GROUND WATER	04/25/17 11:18
17042603-009	2091 B1	GROUND WATER	04/25/17 11:38
17042603-010	DUP-1(042517)	GROUND WATER	04/25/17 11:48
17042603-011	2091 A1	GROUND WATER	04/25/17 11:49

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Sample Summary

Client Name: ERM, Inc. - Annapolis

Project Name: FMC Baltimore Pre Design

Work Order Number(s): 17042603

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: EB-1 (042517) **Date/Time Sampled: 04/25/2017 09:32** **PSS Sample ID: 17042603-001**
Matrix: WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
Benzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Bromoform	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 12:44	1011
Bromomethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
Carbon Disulfide	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Chlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Chloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Chloroform	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Chloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Cyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 12:44	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Ethylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: EB-1 (042517) **Date/Time Sampled: 04/25/2017 09:32** **PSS Sample ID: 17042603-001**
Matrix: WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 12:44	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Methyl Acetate	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
Methylcyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 12:44	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 12:44	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Naphthalene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Styrene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Tetrachloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Toluene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Trichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 12:44	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	04/28/17	04/28/17 12:44	1011
o-Xylene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 12:44	1011

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 C **Date/Time Sampled: 04/25/2017 09:41** **PSS Sample ID: 17042603-002**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
Benzene	**1.4**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Bromoform	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 13:06	1011
Bromomethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
Carbon Disulfide	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Chlorobenzene	**220**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Chloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Chloroform	**2.5**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Chloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Cyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 13:06	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2-Dichlorobenzene	**10**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,3-Dichlorobenzene	**0.59**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 13:06	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,4-Dichlorobenzene	**39**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Ethylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 C **Date/Time Sampled: 04/25/2017 09:41** **PSS Sample ID: 17042603-002**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 13:06	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Methyl Acetate	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
Methylcyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 13:06	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 13:06	1011
Methyl-t-butyl ether	**0.55**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 13:06	1011
Naphthalene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Styrene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Tetrachloroethene	**0.91**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 13:06	1011
Toluene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,2,4-Trichlorobenzene	**4.7**	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Trichloroethene	**0.89**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 13:06	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 13:06	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	04/28/17	04/28/17 13:06	1011
o-Xylene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 13:06	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 D **Date/Time Sampled: 04/25/2017 09:53** **PSS Sample ID: 17042603-003**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**6.1**	ug/L	10	J	1	5	04/28/17	04/28/17 17:59	1011
Benzene	**4.2**	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Bromoform	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 17:59	1011
Bromomethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	04/28/17	04/28/17 17:59	1011
Carbon Disulfide	ND	ug/L	10		1	5	04/28/17	04/28/17 17:59	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Chlorobenzene	**6,300**	ug/L	100		100	50	04/28/17	04/29/17 15:59	1011
Chloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Chloroform	**2.9**	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Chloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Cyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 17:59	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 17:59	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,2-Dichlorobenzene	**160**	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,4-Dichlorobenzene	**630**	ug/L	100		100	50	04/28/17	04/29/17 15:59	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Ethylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011

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BALTIMORE, MD 21228
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 D **Date/Time Sampled: 04/25/2017 09:53** **PSS Sample ID: 17042603-003**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 17:59	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Methyl Acetate	ND	ug/L	10		1	5	04/28/17	04/28/17 17:59	1011
Methylcyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 17:59	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 17:59	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Naphthalene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Styrene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Tetrachloroethene	**1.5**	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Toluene	**0.78**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 17:59	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,2,4-Trichlorobenzene	**11**	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Trichloroethene	**0.51**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 17:59	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 17:59	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 17:59	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	04/28/17	04/28/17 17:59	1011
o-Xylene	**0.75**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 17:59	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 E **Date/Time Sampled: 04/25/2017 10:07** **PSS Sample ID: 17042603-004**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**6.9**	ug/L	10	J	1	5	04/28/17	04/28/17 18:23	1011
Benzene	**7.6**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Bromodichloromethane	**1.8**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Bromoform	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 18:23	1011
Bromomethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	04/28/17	04/28/17 18:23	1011
Carbon Disulfide	ND	ug/L	10		1	5	04/28/17	04/28/17 18:23	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Chlorobenzene	**5,800**	ug/L	100		100	50	04/28/17	04/29/17 16:20	1011
Chloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Chloroform	**12**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Chloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Cyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 18:23	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 18:23	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2-Dichlorobenzene	**150**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,3-Dichlorobenzene	**3.8**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,4-Dichlorobenzene	**610**	ug/L	100		100	50	04/28/17	04/29/17 16:20	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Ethylbenzene	**0.51**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 18:23	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 E **Date/Time Sampled: 04/25/2017 10:07** **PSS Sample ID: 17042603-004**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 18:23	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Methyl Acetate	ND	ug/L	10		1	5	04/28/17	04/28/17 18:23	1011
Methylcyclohexane	ND	ug/L	10		1	5	04/28/17	04/28/17 18:23	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 18:23	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Naphthalene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Styrene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Tetrachloroethene	**1.3**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Toluene	**1.3**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,2,4-Trichlorobenzene	**16**	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Trichloroethene	**0.71**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 18:23	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	04/28/17	04/28/17 18:23	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	04/28/17	04/28/17 18:23	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	04/28/17	04/28/17 18:23	1011
o-Xylene	**0.82**	ug/L	1.0	J	1	0.5	04/28/17	04/28/17 18:23	1011

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410-747-8770
800-932-9047
FAX 410-788-8723

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ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 F **Date/Time Sampled: 04/25/2017 10:21** **PSS Sample ID: 17042603-005**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
Benzene	**56**	ug/L	100	J	100	50	04/29/17	04/29/17 16:41	1011
Bromochloromethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Bromodichloromethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Bromoform	ND	ug/L	500		100	250	04/29/17	04/29/17 16:41	1011
Bromomethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
2-Butanone (MEK)	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
Carbon Disulfide	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
Carbon Tetrachloride	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Chlorobenzene	**12,000**	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Chloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Chloroform	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Chloromethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Cyclohexane	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	500		100	250	04/29/17	04/29/17 16:41	1011
Dibromochloromethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2-Dibromoethane (EDB)	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2-Dichlorobenzene	**290**	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,3-Dichlorobenzene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Dichlorodifluoromethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,4-Dichlorobenzene	**1,400**	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,1-Dichloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2-Dichloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,1-Dichloroethene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
cis-1,2-Dichloroethene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2-Dichloropropane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
cis-1,3-Dichloropropene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
trans-1,3-Dichloropropene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
trans-1,2-Dichloroethene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Ethylbenzene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011

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6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 F **Date/Time Sampled: 04/25/2017 10:21** **PSS Sample ID: 17042603-005**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	500		100	250	04/29/17	04/29/17 16:41	1011
Isopropylbenzene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Methyl Acetate	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
Methylcyclohexane	ND	ug/L	1,000		100	500	04/29/17	04/29/17 16:41	1011
Methylene Chloride	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
4-Methyl-2-Pentanone	ND	ug/L	500		100	250	04/29/17	04/29/17 16:41	1011
Methyl-t-butyl ether	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Naphthalene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Styrene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Tetrachloroethene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Toluene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2,3-Trichlorobenzene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,2,4-Trichlorobenzene	**170**	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,1,1-Trichloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Trichloroethene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
1,1,2-Trichloroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Trichlorofluoromethane	ND	ug/L	500		100	250	04/29/17	04/29/17 16:41	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
Vinyl Chloride	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011
m,p-Xylenes	ND	ug/L	200		100	100	04/29/17	04/29/17 16:41	1011
o-Xylene	ND	ug/L	100		100	50	04/29/17	04/29/17 16:41	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 G **Date/Time Sampled: 04/25/2017 10:51** **PSS Sample ID: 17042603-006**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
Benzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Bromoform	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 16:23	1011
Bromomethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
Carbon Disulfide	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Chlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Chloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Chloroform	**2.8**	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Chloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Cyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 16:23	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
cis-1,2-Dichloroethene	**2.7**	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Ethylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 G **Date/Time Sampled: 04/25/2017 10:51** **PSS Sample ID: 17042603-006**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 16:23	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Methyl Acetate	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
Methylcyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 16:23	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 16:23	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Naphthalene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Styrene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Tetrachloroethene	**0.68**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 16:23	1011
Toluene	**6.4**	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Trichloroethene	**3.2**	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 16:23	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	05/02/17	05/02/17 16:23	1011
o-Xylene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 16:23	1011

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BALTIMORE, MD 21228
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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 L **Date/Time Sampled: 04/25/2017 11:03** **PSS Sample ID: 17042603-007**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
Benzene	**1.1**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Bromoform	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 17:52	1011
Bromomethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
Carbon Disulfide	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Chlorobenzene	**230**	ug/L	10		10	5	05/02/17	05/03/17 10:38	1011
Chloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Chloroform	**2.8**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Chloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Cyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 17:52	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2-Dichlorobenzene	**9.7**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,4-Dichlorobenzene	**42**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2-Dichloroethane	**42**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,1-Dichloroethene	**0.88**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 17:52	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Ethylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2090 L **Date/Time Sampled: 04/25/2017 11:03** **PSS Sample ID: 17042603-007**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 17:52	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Methyl Acetate	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
Methylcyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 17:52	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 17:52	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Naphthalene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Styrene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Tetrachloroethene	**1.2**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Toluene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,2,4-Trichlorobenzene	**3.6**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Trichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
1,1,2-Trichloroethane	**9.8**	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 17:52	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 17:52	1011
Vinyl Chloride	**0.73**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 17:52	1011
m,p-Xylenes	ND	ug/L	2.0		1	1	05/02/17	05/02/17 17:52	1011
o-Xylene	**0.60**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 17:52	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 E1 **Date/Time Sampled: 04/25/2017 11:18** **PSS Sample ID: 17042603-008**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
Benzene	**36**	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Bromochloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Bromodichloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Bromoform	ND	ug/L	50		10	25	05/02/17	05/02/17 16:46	1011
Bromomethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
2-Butanone (MEK)	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
Carbon Disulfide	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
Carbon Tetrachloride	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Chlorobenzene	**1,400**	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Chloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Chloroform	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Chloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Cyclohexane	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	50		10	25	05/02/17	05/02/17 16:46	1011
Dibromochloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2-Dibromoethane (EDB)	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2-Dichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,3-Dichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Dichlorodifluoromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,4-Dichlorobenzene	**12**	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,1-Dichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2-Dichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
cis-1,2-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,1-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2-Dichloropropane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
cis-1,3-Dichloropropene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
trans-1,3-Dichloropropene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
trans-1,2-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Ethylbenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 E1 **Date/Time Sampled: 04/25/2017 11:18** **PSS Sample ID: 17042603-008**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	50		10	25	05/02/17	05/02/17 16:46	1011
Isopropylbenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Methyl Acetate	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
Methylcyclohexane	ND	ug/L	100		10	50	05/02/17	05/02/17 16:46	1011
Methylene Chloride	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
4-Methyl-2-Pentanone	ND	ug/L	50		10	25	05/02/17	05/02/17 16:46	1011
Methyl-t-butyl ether	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Naphthalene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Styrene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Tetrachloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Toluene	**11**	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2,3-Trichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,2,4-Trichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,1,1-Trichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Trichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
1,1,2-Trichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Trichlorofluoromethane	ND	ug/L	50		10	25	05/02/17	05/02/17 16:46	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
Vinyl Chloride	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011
m,p-Xylenes	ND	ug/L	20		10	10	05/02/17	05/02/17 16:46	1011
o-Xylene	ND	ug/L	10		10	5	05/02/17	05/02/17 16:46	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

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CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 B1 **Date/Time Sampled: 04/25/2017 11:38** **PSS Sample ID: 17042603-009**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**13**	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
Benzene	**3.4**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Bromoform	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 15:41	1011
Bromomethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
Carbon Disulfide	ND	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Chlorobenzene	**27**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Chloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Chloroform	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Chloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Cyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 15:41	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,4-Dichlorobenzene	**0.74**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 15:41	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2-Dichloroethane	**13**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Ethylbenzene	**1.1**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011

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6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 B1 **Date/Time Sampled: 04/25/2017 11:38** **PSS Sample ID: 17042603-009**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 15:41	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Methyl Acetate	ND	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
Methylcyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 15:41	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 15:41	1011
Methyl-t-butyl ether	**0.66**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 15:41	1011
Naphthalene	**0.91**	ug/L	1.0	J	1	0.5	05/02/17	05/02/17 15:41	1011
Styrene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Tetrachloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Toluene	**3.0**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Trichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 15:41	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
Vinyl Chloride	**2.7**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011
m,p-Xylenes	**1.0**	ug/L	2.0	J	1	1	05/02/17	05/02/17 15:41	1011
o-Xylene	**1.2**	ug/L	1.0		1	0.5	05/02/17	05/02/17 15:41	1011

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CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: DUP-1(042517) **Date/Time Sampled: 04/25/2017 11:48** **PSS Sample ID: 17042603-010**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
Benzene	**34**	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Bromochloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Bromodichloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Bromoform	ND	ug/L	50		10	25	05/02/17	05/02/17 17:29	1011
Bromomethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
2-Butanone (MEK)	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
Carbon Disulfide	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
Carbon Tetrachloride	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Chlorobenzene	**1,400**	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Chloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Chloroform	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Chloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Cyclohexane	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	50		10	25	05/02/17	05/02/17 17:29	1011
Dibromochloromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2-Dibromoethane (EDB)	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2-Dichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,3-Dichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Dichlorodifluoromethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,4-Dichlorobenzene	**12**	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,1-Dichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2-Dichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,1-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
cis-1,2-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2-Dichloropropane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
cis-1,3-Dichloropropene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
trans-1,3-Dichloropropene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
trans-1,2-Dichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Ethylbenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
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FAX 410-788-8723

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CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: DUP-1(042517) **Date/Time Sampled: 04/25/2017 11:48** **PSS Sample ID: 17042603-010**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	50		10	25	05/02/17	05/02/17 17:29	1011
Isopropylbenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Methyl Acetate	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
Methylcyclohexane	ND	ug/L	100		10	50	05/02/17	05/02/17 17:29	1011
Methylene Chloride	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
4-Methyl-2-Pentanone	ND	ug/L	50		10	25	05/02/17	05/02/17 17:29	1011
Methyl-t-butyl ether	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Naphthalene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Styrene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Tetrachloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Toluene	**11**	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2,3-Trichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,2,4-Trichlorobenzene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,1,1-Trichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Trichloroethene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
1,1,2-Trichloroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Trichlorofluoromethane	ND	ug/L	50		10	25	05/02/17	05/02/17 17:29	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
Vinyl Chloride	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011
m,p-Xylenes	ND	ug/L	20		10	10	05/02/17	05/02/17 17:29	1011
o-Xylene	ND	ug/L	10		10	5	05/02/17	05/02/17 17:29	1011

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ROUTE 40 WEST
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CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 A1 **Date/Time Sampled: 04/25/2017 11:49** **PSS Sample ID: 17042603-011**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**23**	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
Benzene	**52**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Bromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Bromoform	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 19:19	1011
Bromomethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
2-Butanone (MEK)	ND	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
Carbon Disulfide	ND	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Chlorobenzene	**320**	ug/L	10		10	5	05/02/17	05/02/17 18:58	1011
Chloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Chloroform	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Chloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Cyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 19:19	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2-Dichlorobenzene	**1.7**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,4-Dichlorobenzene	**3.0**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Ethylbenzene	**2.5**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17042603

ERM, Inc. - Annapolis, Annapolis, MD

May 3, 2017

Project Name: FMC Baltimore Pre Design
Project Location: Baltimore, MD
Project ID: 0399916

Sample ID: 2091 A1 **Date/Time Sampled: 04/25/2017 11:49** **PSS Sample ID: 17042603-011**
Matrix: GROUND WATER **Date/Time Received: 04/26/2017 10:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 19:19	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Methyl Acetate	ND	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
Methylcyclohexane	ND	ug/L	10		1	5	05/02/17	05/02/17 19:19	1011
Methylene Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 19:19	1011
Methyl-t-butyl ether	**12**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Naphthalene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Styrene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Tetrachloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Toluene	**4.2**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Trichloroethene	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	2.5	05/02/17	05/02/17 19:19	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
Vinyl Chloride	ND	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011
m,p-Xylenes	**1.5**	ug/L	2.0	J	1	1	05/02/17	05/02/17 19:19	1011
o-Xylene	**4.0**	ug/L	1.0		1	0.5	05/02/17	05/02/17 19:19	1011

Case Narrative Summary

Client Name: ERM, Inc. - Annapolis

Project Name: FMC Baltimore Pre Design

Work Order Number(s): 17042603
Project ID: 0399916

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): 17042603
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Baltimore Pre Design
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	EB-1 (042517)	Initial	17042603-001	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 12:44
	2090 C	Initial	17042603-002	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 13:06
	2090 D	Initial	17042603-003	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 17:59
	2090 E	Initial	17042603-004	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 18:23
	65902-1-BKS	BKS	65902-1-BKS	1011	W	65902	142114	--------	04/28/2017 08:23	04/28/2017 09:17
	65902-1-BLK	BLK	65902-1-BLK	1011	W	65902	142114	--------	04/28/2017 08:23	04/28/2017 10:10
	2090 C S	MS	17042603-002 S	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 13:40
	2090 C SD	MSD	17042603-002 SD	1011	W	65902	142114	04/25/2017	04/28/2017 08:23	04/28/2017 14:01
	2090 F	Initial	17042603-005	1011	W	65916	142140	04/25/2017	04/29/2017 08:43	04/29/2017 16:41
	65916-1-BKS	BKS	65916-1-BKS	1011	W	65916	142140	--------	04/29/2017 08:43	04/29/2017 09:48
	65916-1-BLK	BLK	65916-1-BLK	1011	W	65916	142140	--------	04/29/2017 08:43	04/29/2017 11:17
	GW-1 S	MS	17042818-001 S	1011	W	65916	142140	04/28/2017	04/29/2017 08:43	04/29/2017 12:47
	GW-1 SD	MSD	17042818-001 SD	1011	W	65916	142140	04/28/2017	04/29/2017 08:43	04/29/2017 13:08
	2090 D	Reanalysis	17042603-003	1011	W	65902	142140	04/25/2017	04/28/2017 08:23	04/29/2017 15:59
	2090 E	Reanalysis	17042603-004	1011	W	65902	142140	04/25/2017	04/28/2017 08:23	04/29/2017 16:20
	2090 G	Initial	17042603-006	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 16:23
	2090 L	Initial	17042603-007	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 17:52
	2091 E1	Initial	17042603-008	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 16:46
	2091 B1	Initial	17042603-009	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 15:41
	DUP-1(042517)	Initial	17042603-010	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 17:29
	2091 A1	Initial	17042603-011	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 19:19
	65947-1-BKS	BKS	65947-1-BKS	1011	W	65947	142203	--------	05/02/2017 09:16	05/02/2017 10:21
	65947-1-BLK	BLK	65947-1-BLK	1011	W	65947	142203	--------	05/02/2017 09:16	05/02/2017 11:15
	B-6B S	MS	17042116-001 S	1011	W	65947	142203	04/20/2017	05/02/2017 09:16	05/02/2017 13:05
	B-6B SD	MSD	17042116-001 SD	1011	W	65947	142203	04/20/2017	05/02/2017 09:16	05/02/2017 13:26
	2091 A1	Reanalysis	17042603-011	1011	W	65947	142203	04/25/2017	05/02/2017 09:16	05/02/2017 18:58
	65955-1-BKS	BKS	65955-1-BKS	1011	W	65955	142219	--------	05/03/2017 08:08	05/03/2017 09:14
	65955-1-BLK	BLK	65955-1-BLK	1011	W	65955	142219	--------	05/03/2017 08:08	05/03/2017 10:09
	2090 L	Reanalysis	17042603-007	1011	W	65947	142219	04/25/2017	05/02/2017 09:16	05/03/2017 10:38

APPENDIX D

MONITORING WELL LOGS

Environmental Resources Management **MW-63**

ERM *The business of sustainability*

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	3-Aug-17					
Northing	568339	Boring Depth	30	feet BGS	Diameter	6 inches
Easting	1432849.7	Surface Elevation	13.02	feet, site datum		
		Riser Elevation	12.77	feet, site datum		
Screen Type	Schedule 40 PVC	Riser Length	25	feet	Diameter	2 inches
Slot Size	0.01 Inch	Screen Length	5	feet	Diameter	2 inches
Riser Type	Schedule 40 PVC	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0035	Drilling Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			

Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-6" Asphalt. 6-18" Dry, medium-brown, silty SAND with subangular schist GRAVEL throughout - likely road base. 18-60" Plastic weave material at 18" and wet, brown, silty CLAY and small black GRAVEL and fuel smell.
4			1-1-3-6	9		5-7	0-9" Saturated, brown, silty-CLAY.
8							
12			4-1-2-2	5		10-12	0-5" Saturated, brown silty-CLAY at base of split spoon with large chunck of wood was found.
16			7-9-11-11	19		15-17	0-6" Same as above, 73.9 ppm at 5". 6-19" Moist, compact, brown, silty CLAY.
20							
			4-3-4-3	18		20-22	0-18" Moist, hard, brown, silty CLAY with PID readings from 0.0-0.3 ppm VOCs.
24							
			4-2-2-1	24		25-27	0-24" Moist to wet, soft, silty CLAY, grey and homogeneous. 0.0 ppm VOCs throughout whole split spoon.
28			1-1-1-1	24		27-29	0-24" Wet, grey, silty CLAY with PID readings at 11" of 1.1 ppm.
			3-2-3-3	0		29-31	0" No recovery .
32							

Monitoring Well Construction Specifications

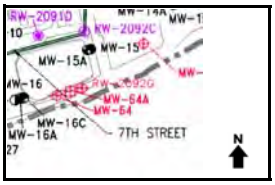
Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval		(Feet BGS)
	Top	0
	Bottom	25
PVC Screen Interval		(Feet BGS)
	Top	25
	Bottom	30

Environmental Resources Management **MW-64**

ERM *The business of sustainability*

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	31-Jul-17					
Northing	568216	Boring Depth	32	feet BGS	Diameter	6 inches
Easting	1432691.2	Surface Elevation	12.039	feet, site datum		
		Riser Elevation	11.76	feet, site datum		
Screen Type	Schedule 40 PVC	Riser Length	21	feet	Diameter	2 inches
Slot Size	0.01 Inch	Screen Length	5	feet	Diameter	2 inches
Riser Type	Schedule 40 PVC	Stabilized DTW	10.35	feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0034	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
4			Hand auger to 5 feet bgs				
			2-1-2-3	18		5-7	0-18" Soft, moist, medium-brown silty CLAY with strong, sweet odor and VOCs up to 9374 ppm.
8							
12			1-1-2-2	21		10-12	0-5" Same as above, PID reading 416 ppm VOCs. 5-21" Soft, wet, black silty CLAY with strong chemical odor and PID readings of 436 ppm at 10" and 700 ppm at 16".
16			3-3-3-3	20		15-17	0-7" Soft, saturated, black silty CLAY and 304 ppm VOCs. 7-20" Soft, saturated, black silty SAND with 123 ppm at 14".
20							
			0-1-1-2	16		20-22	0-11" Soft, saturated, black silty SAND and PID readings at 120 ppm. 11-16" Soft, moist, dark-brown silty CLAY.
24			1-2-2-3	24		25-27	0-9" Saturated, soft, black silty SAND with 2.2 ppm VOCs. 9-24" Moist, soft, grey, silty CLAY.
28							
32			1-1-2-2	24		30-32	0-24" Moist, soft, grey silty CLAY with lenses of brown CLAY.

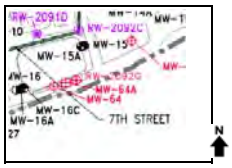
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval		(Feet BGS)
	Top	0
	Bottom	21
PVC Screen Interval		(Feet BGS)
	Top	21
	Bottom	26

Environmental Resources Management **MW-64A**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations				
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation				
Completed	31-Jul-17						
Northing	568218	Boring Depth	62	feet BGS	Diameter	8 inches	
Easting	1432694.4	Surface Elevation	12.085	feet, site datum			
		Riser Elevation	11.8	feet, site datum			
Screen Type	Schedule 40 PVC	Riser Length	50	feet	Diameter	2 inches	
Slot Size	0.01 Inch	Screen Length	10	feet	Diameter	2 inches	
Riser Type	Schedule 40 PVC	Stabilized DTW	10.15	feet BGS			
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius				
Well Permit ID	BC-16-0030	Drilling Company	SGS North America, Inc.				
		Driller(s)	Wesley Eichfield, Scott Moore				



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-4" Asphalt cover. 4-18" Dry, medium-brown silty SAND with angular to subangular grey GRAVELS throughout and red brick at 12". 18-34" Moist, soft, light-brown to tan silty SAND. 34-48" Moist dark-brown to black silty SAND strong VOC oder and PID reading of 359.6 ppm with plastic and copper tubing found. 48-60" Moist, golden-brown silty CLAY with PID reading of 134.2 ppm.
4			2-4-2-2	13		4-6	0-5" Soft, moist. Dark-brown silty CLAY with a strong chemical odor and 126.4 ppm reading on the PID. 5-13" Compact, golden-brown silty CLAY
8			2-3-3-3	24		6-8	0-24" Compact, moist tan to great silty CLAY with PID readings greater than 2000 ppm throughout
			3-1-2-1	11		9-11	0-4" Moist, tan to golden-brown silty CLAY. 4-11" Moist, soft, dark-brown to black silty CLAY with chemical odor and PID reading of 67.2 ppm.
12			2-2-2-2	23		11-13	0-7" Wet, soft. Dark-brown silty CLAY with checmical odor and 24.6 ppm VOCs. 7-23" Wet, soft, black SILT to silty CLAY with strong chemical odor and high VOC reading of 155.4 ppm.
			2-2-1-2	17		13-15	0-4" Wet, soft, grey-tan silty CLAY with 35.5 ppm PID reading. 4-12" Wet, soft, black silty CLAY with VOC high of 89.0 ppm. 12-17" Moist, medium-brown silty SAND with roots and plant matterial throughout and 21.8 ppm VIC reading.
16			4-4-4-3	16		15-17	0-16" Wet, black, fine-grain SAND with oily sheen and water. Very strong odor and PID readings from 56.7 to 167.4 ppm.
			2-2-1-1	0		17-19	0" No Recovery
20			2-1-1-1	24		19-21	0-10" Wet, black, oily silty SAND with strong odor 96.5 ppm VOCs. 10-24" Moist, medium-brown silty CLAY with 5.6 ppm VOC reading.
			4-3-2-1	12		21-23	0-8" Wet, black, oily sily SAND with strong odor and 3.0 ppm PID reading. 8-12" Wet, tan to grey silty SAND with sub-rounded to rounded granvels and wood fragments found at 12".
24			2-1-1-1	21		23-25	0-17" Saturated, black silty SAND with oily sheen and strong chemical odor. 17-21" Moist, grey to tan silty CLAY with 0.5 ppm PID reading.
			2-1-1-1	18		25-27	0-3" Wet, oily, black silty SAND with strong oder and sheen. 3-18" Moist, compact, medium-brown to grey silty CLAY.
28			0-3-2-2	24		27-29	0-24" Soft to hard and compact, moist grey and medium-brown to golden-brown marbles silty CLAY.
			0-0-2-2	24		29-31	0-24" Saturadted, grey and golden-brown silty CLAY with PID readings from 0.5 to 30.5 ppm.
32			2-1-2-2	24		31-33	0-24" Wet compact grey and golden-brown silty CLAY with wood at 4" and PID readings from 0.0 to 6.4 ppm.
			0-0-0-0	24		33-35	0-24" Saturated, soft, grey, silty-CLAY with sub-angular gravel at 1" and 23".
36			0-0-0-2	24		35-37	0-24" Saturated, soft, grey silty CLAY
			1-15-19-22	24		37-39	0-12" Saturated, soft, grey silty CLAY. 12-16" Saturated, soft dark grey to black silty CLAY. 16-24" Wet, hard and compact, brown, red-brown, and tan, medium to fine-grain SAND
40			1-1-1-1	9		39-41	0-9" Saturated, fine-grain, tan SAND with occasional medium and gravel grains
			7-11-10-11	21		41-43	0-21" Saturated, fine to medium-grain SAND with color changing from golden-brown to tan.
44			5-20-27-18	24		43-45	0-17" Saturated, golden-brown, fine to medium grain SAND. 17-19" Saturated, hard and compact, grey, medium-grain SAND and GRAVEL. 19-24" Saturated, golden-brown, fine to medium-grain SAND and GRAVEL,
			4-12-10-8	16		45-47	0-16" Saturated, golden-brown, fine to medium-grain SAND.
48			7-9-8-9	22		47-49	0-22" Saturated, golden-brown, fine to medium grain SAND.
			17-18-21-22	24		49-51	0-13" Saturated, golden-brown, fine to medium grain SAND. 13-24" Saturated, tan, fine to medium-grain SAND with poorly sorted GRAVEL
52			15-27-42-50/1	24		51-53	0-11" Saturated, light-brown, fine to medium-grain SAND. 11-24" Saturated, tan to golden-brown, fine t0 medium-grain SAND.
			6-27-47-50/5	22		53-55	0-8" Same as above. 8-22" Dry, compact, light tan and orange-brown silty SAND to SILT
56			5-12-24-28	24		55-57	0-10" Saturated, light to medium-brown, fine to medium-grain SAND. 10-24" Saturated, tightly packed, poorly sorted, fine-grain SAND with GRAVEL and a lense of grey silty CLAY from 15-17".
			50-47-60-5	24		57-59	0-24" Same as above
60			37-50-50	24		59-61	0-24" Saturated, golden-brown, fine to medium-grain SAND.
			27-50-50/3	20		60-62	0-20" Same as above

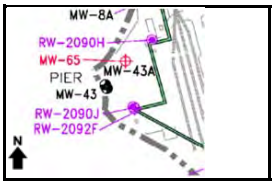
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	0
Bottom	50
PVC Screen Interval	(Feet BGS)
Top	50
Bottom	60

Environmental Resources Management **MW-65**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	17-Aug-17					
Northing	568641	Boring Depth	32	feet BGS	Diameter	6 inches
Easting	1431652.2	Surface Elevation	4.45	feet, site datum		
		Riser Elevation	4.09	feet, site datum		
Screen Type	Schedule 40 PVC	Riser Length	15	feet	Diameter	2 inches
Slot Size	0.01 Inch	Screen Length	5	feet	Diameter	2 inches
Riser Type	Schedule 40 PVC	Stabilized DTW	4.09	feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0031	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-24" Dry, GRAVEL and Brick in a brown SAND matrix
4			1-1-2-3	8		5-7	0-3" Wet, red brick fragments. 3-5" Wet, grey to dark brown silty CLAY with a 1.1 ppm VOC reading. 5-8" Dry, brown silty CLAY.
8							
12			1-0-1-3	17		10-12	0-12" Saturated, soft, brown silty CLAY. 12-17" Wet, grey, compact silty CLAY.
16			2-2-2-2	14		15-17	0-5" Wet, brown silty CLAY with brick fragments and wood at 4". 5-14" Wet, hard, grey silty CLAY.
20			3-2-1-2	3		20-22	0-3" Wet, soft, brown silty CLAY.
24			1-2-2-2	24		25-27	0-24" Moist, black silty CLAY.
28							
32			2-2-2-2	23		30-32	0-23" Moist, black silty CLAY.

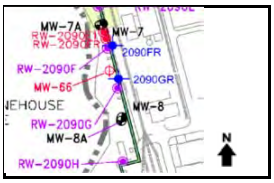
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	0
Bottom	15
PVC Screen Interval	(Feet BGS)
Top	15
Bottom	20

Environmental Resources Management **MW-66**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	10-Aug-17					
Northing	568915	Boring Depth	32	feet BGS	Diameter	6 inches
Easting	1431686.4	Surface Elevation	10.6	feet, site datum		
		Riser Elevation	10.14	feet, site datum		
Screen Type	Schedule 40 PVC	Riser Length	26.5	feet	Diameter	2 inches
Slot Size	0.01 Inch	Screen Length	5	feet	Diameter	2 inches
Riser Type	Schedule 40 PVC	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0032	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
4			Hand auger to 5 feet bgs	60		0-5"	0-24" Dry, brown, silty SAND with large rock cobbles. 24-60" Moist, black silty CLAY with PID readings from 2.0 to 7.1 ppm.
8			2-3-5-5	13		5-7	0-13" Dry, black SILT with 0.2 ppm VOCs at 10" and 0.0 ppm everywhere else.
12			3-5-5-4	22		10-12	0-8" Dry, black SILT with 0.0 ppm VOCs. 8-22" Wet, black, tarry and oily silty CLAY with strong chemical odor and 127.0 ppm at 20".
16			4-2-2-4	22		15-17	0-9" Dry, brown silty CLAY with strong odor at 7" and 120 ppm VOCs. 9-22" Moist, soft, tan silty CLAY.
20			4-2-2-3	24		20-22	0-7" Moist, black silty CLAY, strong odor, and 372.0 ppm PID reading at 6"
24			1-0-0-2	22		25-27	0-22" Saturated, grey to tan, silty CLAY.
28							
32			3-24-39-24	24		30-32	0-9" Saturated, grey to tan silty CLAY. PID at 4" is 19.0 ppm. 9-24" Saturated, golden-brown, fine-grain SAND

Monitoring Well Construction Specifications

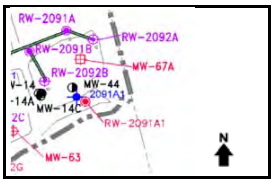
Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval		(Feet BGS)
	Top	0
	Bottom	26.5
PVC Screen Interval		(Feet BGS)
	Top	26.5
	Bottom	31.5

Environmental Resources Management **MW-67A**

ERM The Business of Sustainability

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	9-Aug-17					
Northing	568541	Boring Depth	62	feet BGS	Diameter	6 inches
Easting	1433064.7	Surface Elevation	12.177	feet, site datum		
		Riser Elevation	11.905	feet, site datum		
Screen Type	Schedule 40 PVC	Riser Length	50	feet	Diameter	2 inches
Slot Size	0.01 Inch	Screen Length	10	feet	Diameter	2 inches
Riser Type	Schedule 40 PVC	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0033	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-60" Mix of brown to tan, fine-grain SAND and silty CLAY.
4			2-2-4-5	24		5-7	0-24" Dry, soft, light to golden-brown, silty CLAY and VOC readings of 15.1 ppm at 13".
8							
12			2-5-6-8	22		10-12	0-11" Moist, golden-brown, silty CLAY with 4.1 ppm VOCs at 9". 11-22" Moist, grey and golden-brown, alternating layers of well-sorted, fine-grain SAND.
16			2-1-1-2	24		15-17	0-6" Moist, golden-brown, silty CLAY. 6-24" Moist, soft, grey, silty CLAY.
20							
			1-2-2-2	10		20-22	0-10" Wet, golden-brown, silty CLAY, grey staining on on side of spoon.
24			0-1-3-4	24		25-27	0-11" Wet, soft, grey silty CLAY. 11-24" Moist, compact, brown to dark grey silty CLAY lenses of the silty CLAY are dry and break into flakes when split-spoon is opened.
28							
32			2-2-4-5	24		30-32	0-7" Moist, soft, brown to dark grey, silty CLAYwith lenses of dry silty CLAY. 7-24" Dry, hard and compact, dark grey silty CLAY.
36			2-2-3-5	24		35-37	0-24" Moist, hard and compact, dark grey, silty CLAY.
40							
			3-4-5-7	24		40-42	0-24" Dry, dark-grey, silty CLAY. From 0-13" the matterial was hard and black. From 13-24" the material was softer.
44			7-9-8-10	8		45-47	0-8" Saturated, poorly sorted, fine-grain SAND to coarse SAND with rounded to sub-rounded clasts.
48							
52			12-12-14-15	12		50-52	0-12" Saturated, poorly-sorted SAND and GRAVEL with clasts ranging from fine-grain to 4" pebbles that are sub-rounded to sub-angular.
56			1-8-14-18	11		55-57	0-11" Saturated, medium-brown, fine-grain SAND matrix with unsorted GRAVEL clasts range from 0.05" to 1" in size.
60							
			NA	0		60-62	No spoon, running SAND and GRAVEL.

Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

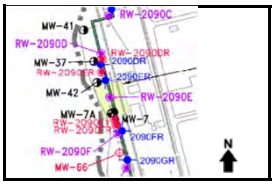
PVC Riser Interval	(Feet BGS)
Top	0
Bottom	50
PVC Screen Interval	(Feet BGS)
Top	50
Bottom	60

APPENDIX E

RECOVERY WELL LOGS

Environmental Resources Management **RW-2090DR**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	15-Aug-17					
Northing	569213	Boring Depth	40	feet BGS	Diameter	12 inches
Easting	1431626.3	Surface Elevation	7.442	feet, site datum		
		Riser Elevation	10.052	feet, site datum		
Screen Type	Steel Casing	Riser Length	17	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	20	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0036	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-30" Dry, brown, silty SAND with brick and concrete fragments throughout. 30-60" Moist. Brown, silty CLAY with a gasoline smell throughout and a high PID reading of 52.8 ppm at 60".
4			7-1-2-2	16		5-7	0-16" Dry, fall-in at top of the spoon, but primarily moist, dark, brown to black silty SAND with strong gasoline odor and VOC readings of 31.1 ppm at 6" and 99.2 at 12".
8							
12			3-3-4-6	20		10-12	0-20" Moist, tan, silty CLAY with orange-brown, fine-grain SAND with VOC readings of 1.7 ppm at 4", 1.2 ppm at 15", and 0.9 ppm at 18".
16			2-2-4-5	20		15-17	0-20" Wet, tan, silty CLAY with orange-brown, fine-grain SAND.
20			1-3-4-10	23		20-22	0-11" Saturated, tan and grey, silty CLAY with orange-brown, fine-grain SAND. 11-12" Saturated, orange brown, fine to medium-grain SAND. 12-17" Saturated, grey silty CLAY. 17-23" Saturated, orange-brown SAND and GRAVEL.
24			9-20-10-7	18		25-27	0-18" Saturated, golden-brown SAND matrix with GRAVEL throughout and red and white CLAY at the end of the spoon.
28							
32			17-40-50/5	20		30-32	0-20" Moist, compact, golden-brown, fine-grain SAND.
36			3-34-50/1	15		35-37	0-15" Moist, compact, golden-brown, fine-grain SAND with red streaks from 10-15" with PID readings of 1.7 ppm at 13".
40			14-12-22-48	24		40-42	0-6" Wet, compact, golden-brown, fine-grain SAND with red streaks. 6-24" Moist, compact, golden-brown, fine-grain SAND with red streaks.

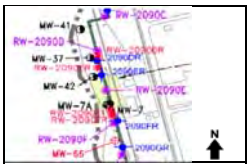
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-2
Bottom	15
Steel Screen Interval	(Feet BGS)
Top	15
Bottom	35
Steel Sump Interval	(Feet BGS)
Top	35
Bottom	40

Environmental Resources Management **RW-2090ER**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	16-Aug-17					
Northing	569169	Boring Depth	40	feet BGS	Diameter	12 inches
Easting	1431634.8	Surface Elevation	8.301	feet, site datum		
		Riser Elevation	11.7	feet, site datum		
Screen Type	Steel Casing	Riser Length	22	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	15	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0037	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-18" Dry, medium-brown, silty SAND with large, sub-angular GRAVEL throughout. Brick was found at 12". 18-40" Moist, dark brown, silty SAND, sub-angular GRAVELS and stones throughout at 29" was a large sub-rounded stone. 40-60" Moist, brown silty CLAY with streaks of red brick.
4			2-3-4-2	7		5-7	0-7" Moist, brown silty CLAY with streaks of red brick.
8							
12			2-3-2-5	0		10-12	0" Red brick stuck in the spoon.
16			2-5-6-7	24		15-17	0-4" Wet, brown silty CLAY. 4-24" Moist, hard and compact grey, silty CLAY and golden-brown, fine-graib SAND mix.
20			3-6-7-6	6		20-22	0-6" Saturated, grey, silty CLAY and golden-brown, fine-grain SAND mix.
24			10-49-3-4	24		25-27	0-5" Saturated, grey, silty CLAY. 5-6" Large quartz clast. 6-15" Brown-stained water. 15-24" Saturated, golden-brown, fine-grain SAND and red GRAVEL.
28							
32			10-22-40-17	24		30-32	0-15" Saturated, fine-grain SAND with range of color from tan to golden brown. 15-23" Dry, white to tan CLAY. 23-24" Dry, red CLAY.
36			15-14-22-50	24		35-37	0-23" Saturated, fine-grain SAND. 23-24" Dry, red CLAY.
40			12-50/5	24		40-42	0-19" Saturated, fine-grain SAND. 19-24" Dry, red CLAY.

Monitoring Well Construction Specifications

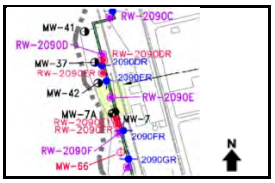
Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-0.35
Bottom	21.55
Steel Screen Interval	(Feet BGS)
Top	21.55
Bottom	36.55
Steel Sump Interval	(Feet BGS)
Top	36.55
Bottom	41.55

Environmental Resources Management **RW-2090E1**

ERM *The business of sustainability*

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	22-Aug-17					
Northing	569034	Boring Depth	40	feet BGS	Diameter	12 inches
Easting	1431663.9	Surface Elevation	9.91	feet, site datum		
		Riser Elevation	14.88	feet, site datum		
Screen Type	Steel Casing	Riser Length	22	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	15	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0038	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-24" Dry, dark-brown, silty SAND with red brick and GRAVEL. 24-60" Nmoist, black silty CLAY with brick and sub-angular GRAVEL and PID readings of 26.5 ppm.
4			1-1-1-2	18		5-7	0-5" Wet, black SILT with a PID reading 3.8 ppm. 5-8" Wet, soft, orange-brown, silty CLAY. 8-12" Wet, soft, orange-brown, silty CLAY. 12-17" Moist, compact, tan, silty CLAY. 17-18" Wet, black, silty CLAY and PID reading of 0.8 ppm.
8							
12			0-0-0-1	18		10-12	0-3" Wet, black sludge with PID reading of 17.4 ppm. 3-18" Moist, brown and grey, silty CLAY.
16			3-3-5-5	24		15-17	0-24" Moist, compact grey and tan silty CLAY. Wet sludge mix from 2-3".
20			0-0-0-3	24		20-22	0-24" Moist, tan and grey, silty CLAY.
24			0-2-7-9	24		25-27	0-22" Wet, grey. Silty CLAY. 22-24" Wet, golden-brown, fine-grain SAND.
28							
32			12-14-17-17	24		30-32	0-18" Wet, grey, silty CLAY. 18-22" Saturated, golden-brown, fine-grain SAND and sub-angular GRAVEL.
36			12-24-30-13	20		35-37	0-5" Saturated, sub-angular GRAVEL. 5-20" Dry, compact, red CLAY.
40			16-40-50/2	24		40-42	0-19" Saturated, sub-angular GRAVEL. 19-24" Moist, red CLAY

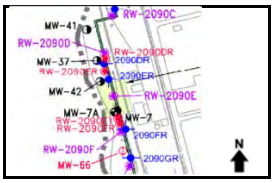
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-2
Bottom	20
Steel Screen Interval	(Feet BGS)
Top	20
Bottom	35
Steel Sump Interval	(Feet BGS)
Top	35
Bottom	40

Environmental Resources Management **RW-2090FR**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	11-Aug-17					
Northing	568996	Boring Depth	40	feet BGS	Diameter	12 inches
Easting	1431670.1	Surface Elevation	10.48	feet, site datum		
		Riser Elevation	12.88	feet, site datum		
Screen Type	Steel Casing	Riser Length	20	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	15	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0039	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-24" Dry, brown, silty SAND with red brick fragments. 24-60" Moist, black, silty CLAY with strong chemical odor, large rocks at 46".
4			6-10-3-3	3		5-7	0-3" Moist, black silty CLAY with large cobbles at 3" and PID readings of 31.4 ppm at 1".
8							
12			1-0-0-1	18		10-12	0-4" Dry, black, silty CLAY with PID reading of 9.3 ppm at 1.5". 4-18" Wet to saturated, soft, grey and tan marbled silty CLAY throughout.
16			4-6-8-10	24		15-17	0-5" Wet, black, silty CLAY and PID reading of 5.0 ppm at 4". 5-24" Moist, compact, tan and grey silty CLAY.
20			2-2-2-2	24		20-22	0-3" Moist, back, silty CLAY and PID reading of 0.9 ppm. 3-24" Moist, compact, grey and tan marbled, silty CLAY.
24			0-0-0-3	24		25-27	0-24" Wet, compact, grey and tan marbled silty CLAY.
28							
32			1-0-5-10	13		30-32	0-13" Saturated, brown and golden-brown, fine-grain SAND and GRAVEL.
36			30-50/1	12		35-37	0-12" Wet, hard-packed, fine-grain SAND.
40			34-48-50/3	18		40-42	0-18" Wet, hard-packed, fine-grain SAND.

Monitoring Well Construction Specifications

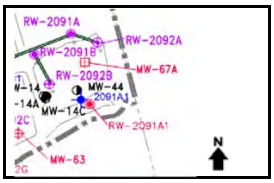
Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-2
Bottom	20
Steel Screen Interval	(Feet BGS)
Top	20
Bottom	35
Steel Sump Interval	(Feet BGS)
Top	35
Bottom	40

Environmental Resources Management **RW-2091A1**

ERM *The business of sustainability*

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	7-Aug-17					
Northing	568427	Boring Depth	40	feet BGS	Diameter	12 inches
Easting	1433058	Surface Elevation	16.61	feet, site datum		
		Riser Elevation	18.41	feet, site datum		
Screen Type	Steel Casing	Riser Length	17	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	20	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0040	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-3" Grass top soil. 3-60" Dry, medium-brown, silty SAND with angular to sub-angular GRAVEL.
4			4-6-8-8	15		5-7	0-15" Moist, brown, silty CLAY with 6.7 ppm at 13".
8							
12			1-3-5-7	23		10-12	0-2" Moist, soft, brown silty CLAY. 2-23" Dry, compact, grey and red-brown marbled silty CLAY.
16			2-5-6-7	24		15-17	0-9" Dry, compact, grey and red-brown marbles silty CLAY. 9-24" Moist, soft, brown, fine-grain SAND.
20			1-2-1-1	24		20-22	0-7" Moist, compact, grey and red-brown marbled silty CLAY. 7-24" Saturated, brown, fine-grain SAND.
24			2-1-2-2	24		25-27	0-24" Moist, hard and compact, grey and red-brown marbled silty CLAY.
28							
32			0-5-6-8	24		30-32	0-5" Wet, grey and red-brown marbled silty CLAY. 5-24" Moist, compact, dark-brown, silty CLAY.
36			1-2-4-4	24		35-37	0-24" Moist, compact, dark-brown silty CLAY with lenses of wet greya nd red-brown marbled silty CLAY from 0 6".
40			2-3-5-4	24		40-42	0-24" Moist, compact, dark-brown silty CLAY.

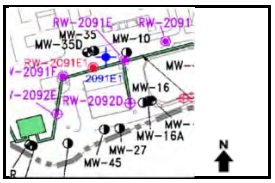
Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-2
Bottom	15
Steel Screen Interval	(Feet BGS)
Top	15
Bottom	35
Steel Sump Interval	(Feet BGS)
Top	35
Bottom	40

Environmental Resources Management **RW-2091E1**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	3-Aug-17					
Northing	568289	Boring Depth	35	feet BGS	Diameter	12 inches
Easting	1432408.9	Surface Elevation	9.64	feet, site datum		
		Riser Elevation	11.91	feet, site datum		
Screen Type	Steel Casing	Riser Length	12	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	20	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0041	Drillng Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			



Location Sketch Map

Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-4" Asphalt top. 4-12" Dry, light brown, silty SAND with GRAVEL and Asphalt. 12-54" Moist, dark-brown and red silty CLAY. 54-60" Concrete.
4			50/5	6		5-7	0-4" Moist, dark-brown silty CLAY. 4-6" Dry, grey concrete.
8							
12			2-1-4-6	13		10-12	0-5" Dry, compact, light-brown, silty SAND. 5-13" Wet, soft, black silty SAND with 11.0 ppm VOCs at 8".
16			4-3-6-8	22		15-17	0-8" Saturated, soft, wet and oily, black and grey, silty CLAY. 8-10" Wet, compact, grey and black silty CLAY. 10-12" Moist, hard, black and grey silty CLAY
20			7-4-3-4	4		20-22	0-4" The spoon is saturated but soil in sleeve is hard, compact, grey silty CLAY and fine-grain SAND.
24			2-1-1-2	23		25-27	0-23" Wet, soft, grey, silty CLAY. VOC readings up to 4.4 ppm.
28							
32			2-0-0-2	24		30-32	0-24" Wet, soft, grey, silty CLAY. VOC readings up to 1.4 ppm.
36			10-40-45	24		35-37	0-7" Saturated, grey, silty CLAY with 4.6 ppm VOCs. 7-14" Saturated, dark, brown, silty SAND with high VOC of 0.9 ppm. 14-24" Saturated, golden-brown, silty SAND to fine-grain SAND with 1.1 ppm VOC reading.

Monitoring Well Construction Specifications

Surface completion is a flush mount protective casing anchored into the cement and surface pad. The well is equipped with a PVC top cap.

PVC Riser Interval	(Feet BGS)
Top	-2
Bottom	10
Steel Screen Interval	(Feet BGS)
Top	10
Bottom	30
Steel Sump Interval	(Feet BGS)
Top	30
Bottom	35

Environmental Resources Management **RW-2092G**

WO No:	414901	Project	FMC Baltimore CMI - Recovery and Monitoring Well Installations			
Location	1701 E Patapsco Ave, Baltimore MD	Owner	FMC Corporation			
Completed	25-Aug-17					
Northing	568224	Boring Depth	65	feet BGS	Diameter	12 inches
Easting	1432705.2	Surface Elevation	12.33	feet, site datum		
		Riser Elevation	14.7	feet, site datum		
Screen Type	Steel Casing	Riser Length	42	feet	Diameter	6 inches
Slot Size	0.01 slot	Screen Length	20	feet	Diameter	6 inches
Riser Type	Schedule 40 PVC	Sump Length	5	feet	Diameter	6 inches
Sump Type	Steel Casing	Stabilized DTW		feet BGS		
Drilling Method	Hollow Stem Auger	ERM Geologist	Skylar Georgius			
Well Permit ID	BC-16-0042	Drilling Company	SGS North America, Inc.			
		Driller(s)	Wesley Eichfield, Scott Moore			

Location Sketch Map

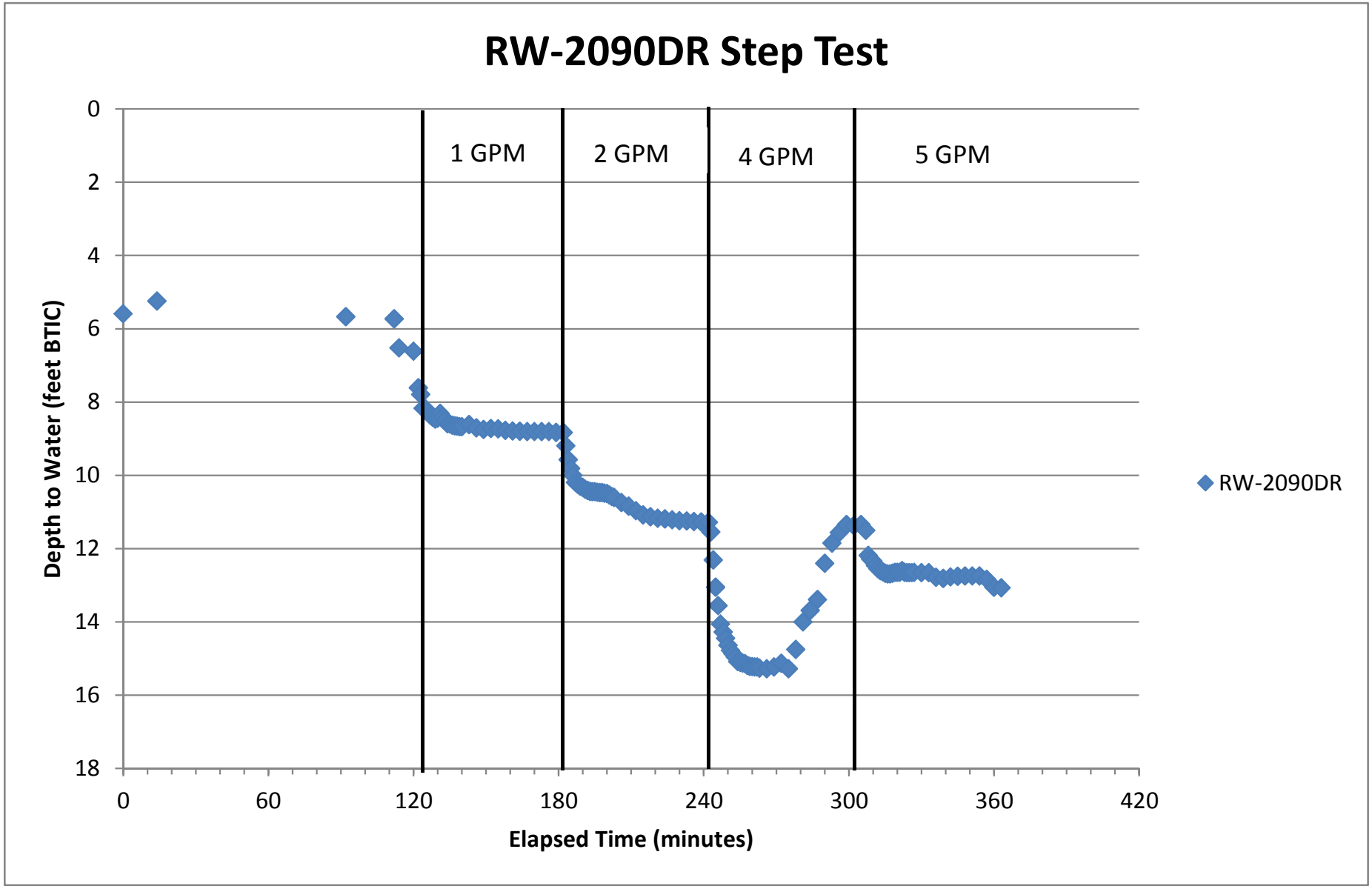
Depth (feet BGS)	Elevation (feet, MSL)	Well Construction Schematic	Blow Counts	Recovery (inches)	Sediment	Sample Interval (feet BGS)	Sample Description/Classification
	0						
			Hand auger to 5 feet bgs	60		0-5	0-4" Asphalt and road base. 4-36" Moist, brown, silty SAND. 36-60" Moist, black, silty SAND with white granules, plastic wood throughout with a PID reading of 283.0 ppm.
4						5-7	0-4" Saturated GRAVEL with plastic at 2". 4-10" Saturated, grey and tan marble silty CLAY.
8							
12						10-12	0-9" Wet, brown, silty CLAY and GRAVEL fall in from 0-3" and PID readings 36.2 ppm.
16						15-17	0-2" Saturated, brown, silty CLAY.
20						20-22	0-16" Saturated, brown silty CLAY and a piece of wood from 14-16". 16-18" Moist, grey and tan marble silty CLAY.
24						25-27	0-24" Wet, grey and orange-brown silty CLAY.
28							
32						30-32	0-24" Same as above.
36						35-37	0-24" Moist, grey, silty CLAY.
40						40-42	0-18" Saturated, fine-grain SAND.
44						45-47	0-13" Saturated, sub-rounded GRAVEL.
48							
52						50-52	0-7" Saturated, sub-rounded GRAVEL. 7-23" Saturated, golden, fine-grain SAND.
56						55-57	0-6" Saturated GRAVEL. 6-14" Wet, extremely tightly-packed, fine-grain SILT and SAND. 14-19" Saturated, fine-grain SAND with GRAVEL throughout.
60						60-62	0-10" Saturated GRAVEL. 10-21" Saturated SAND.
64						65-67	0-13" Saturated GRAVEL. 13-21" Saturated, fine-grain SAND with GRAVEL.

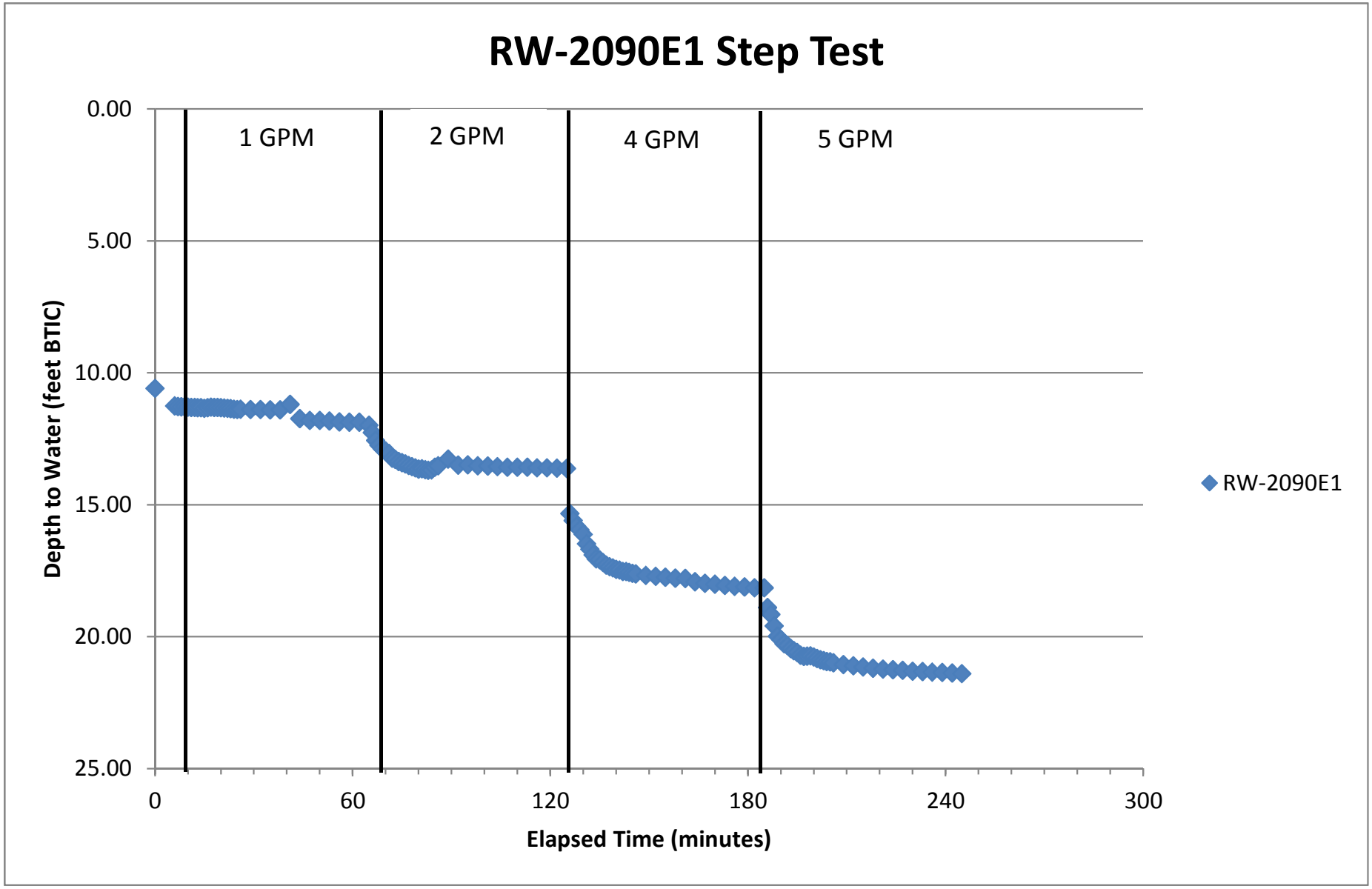
Monitoring Well Construction Specifications

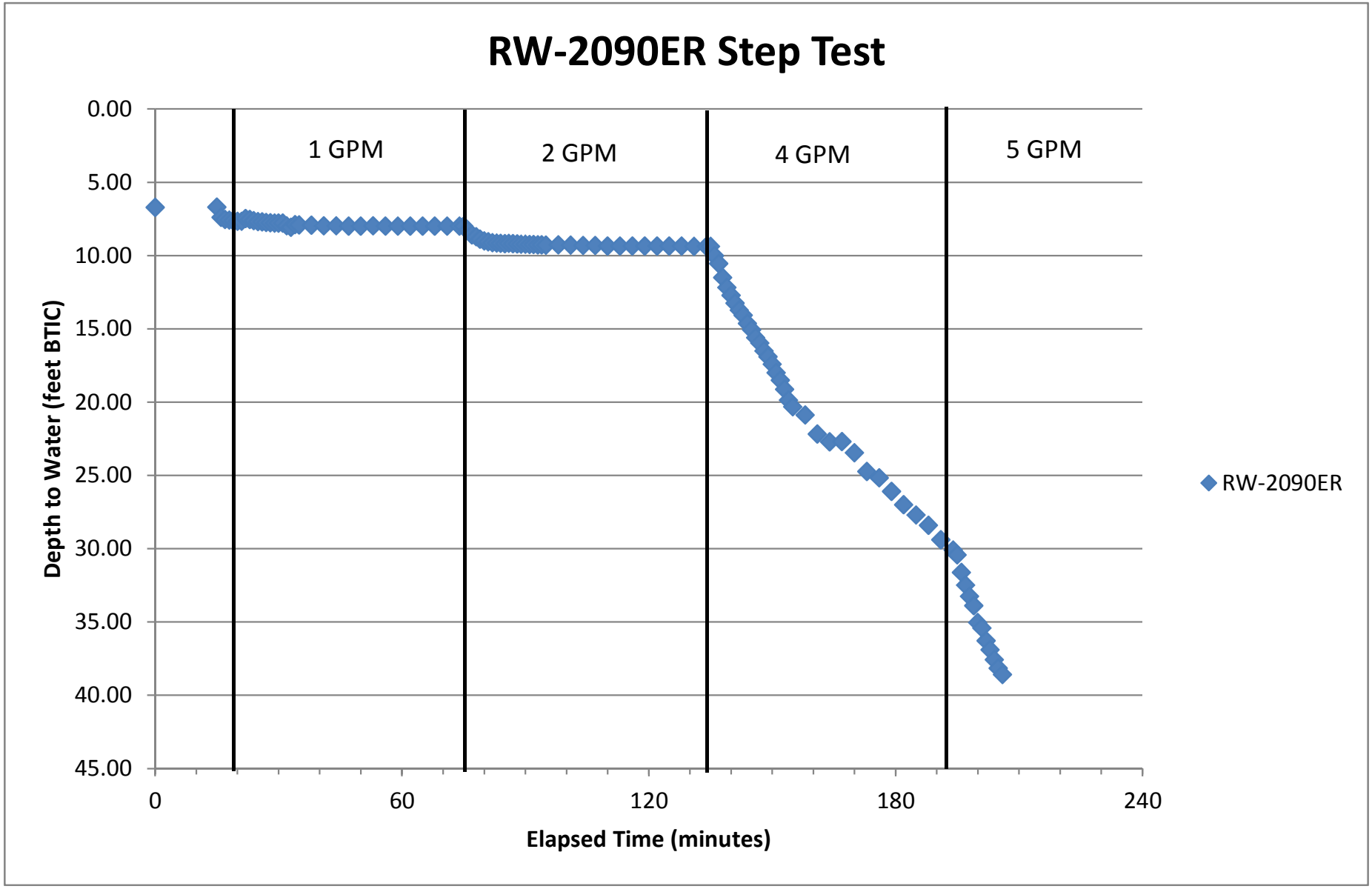
PVC Riser Interval		(Feet BGS)
	Top	-2
	Bottom	40
Steel Screen Interval		(Feet BGS)
	Top	40
	Bottom	60
Steel Sump Interval		(Feet BGS)
	Top	60
	Bottom	65

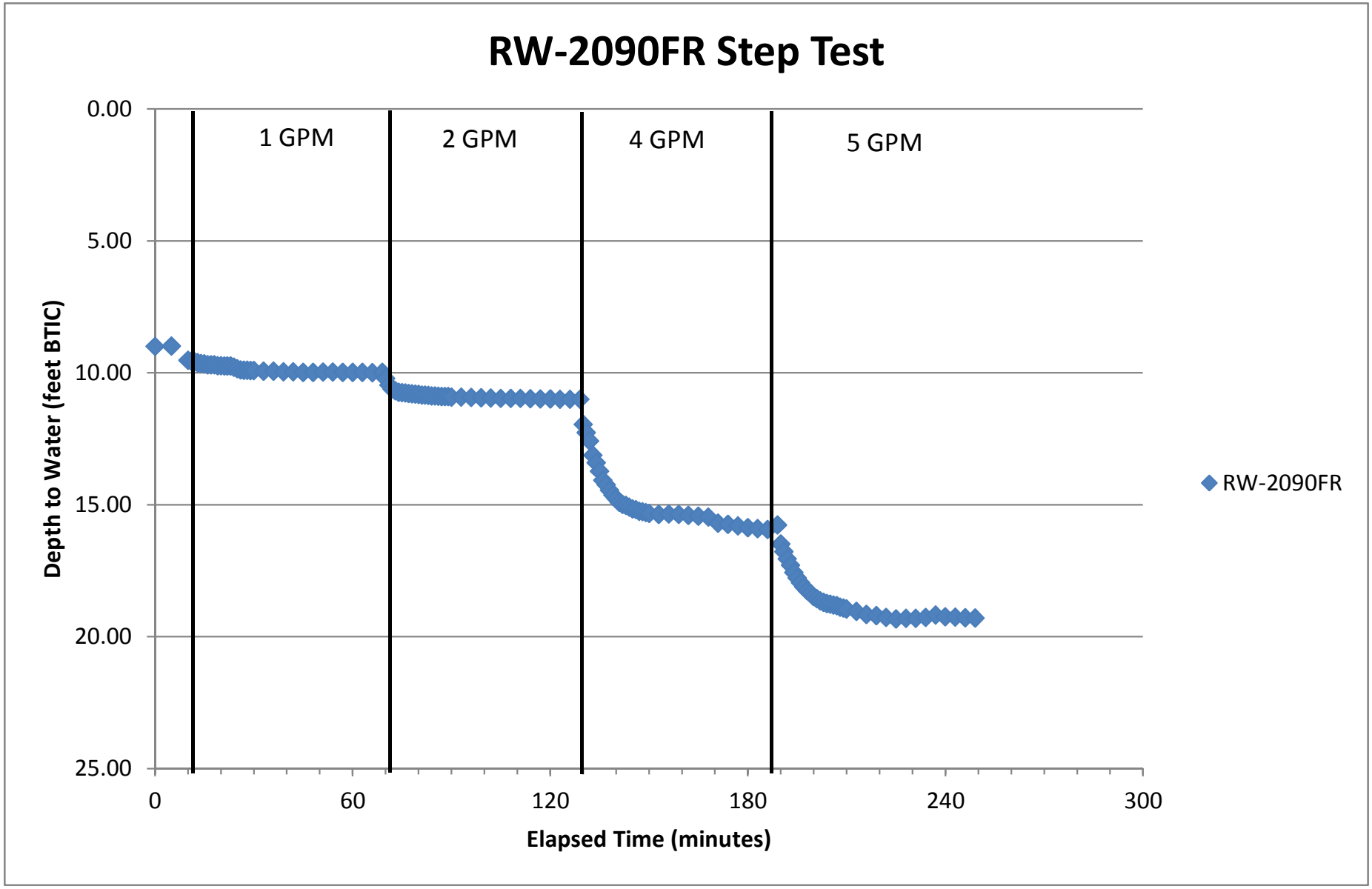
APPENDIX F

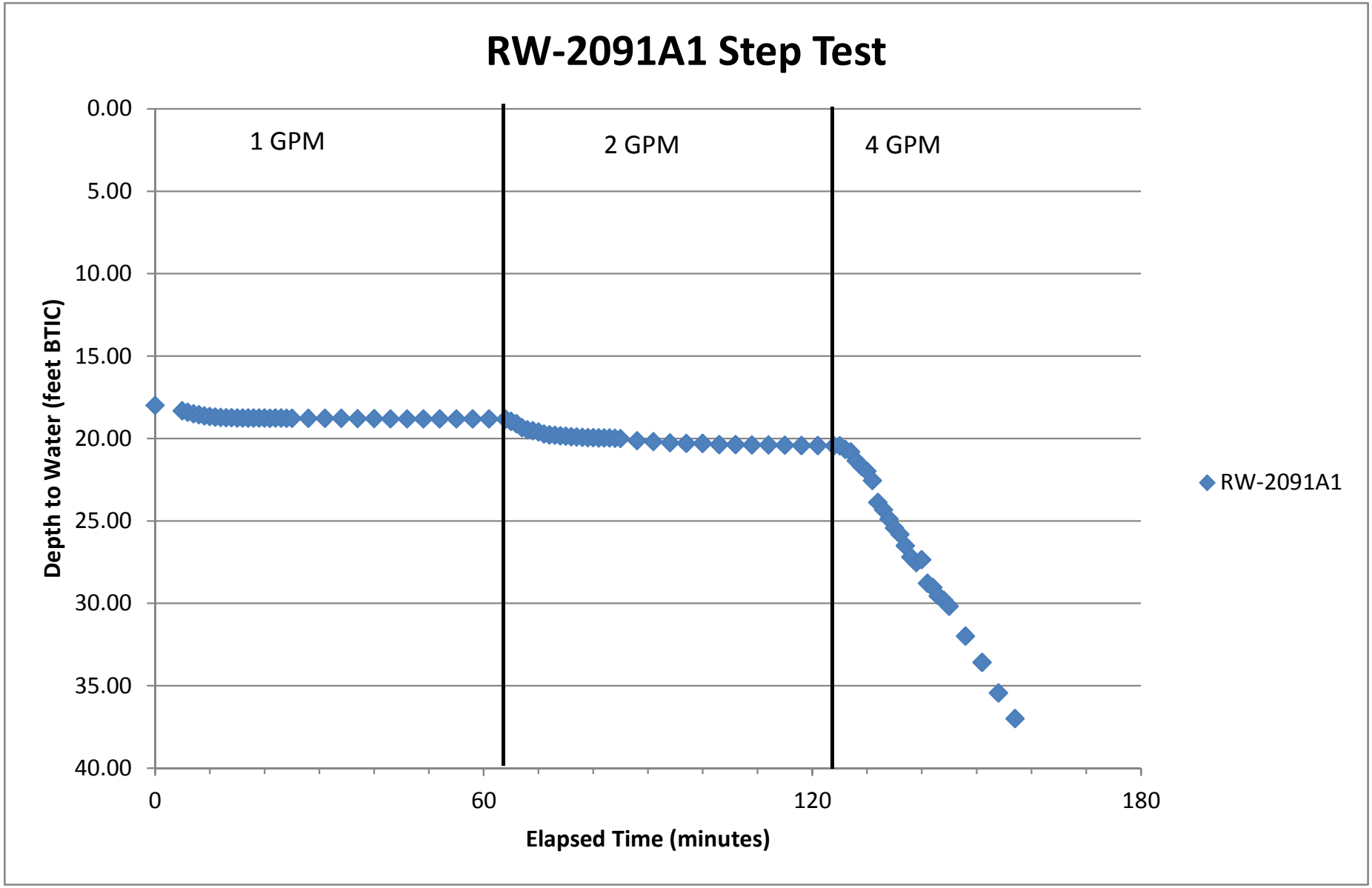
INDIVIDUAL WELL PUMP TEST DATA

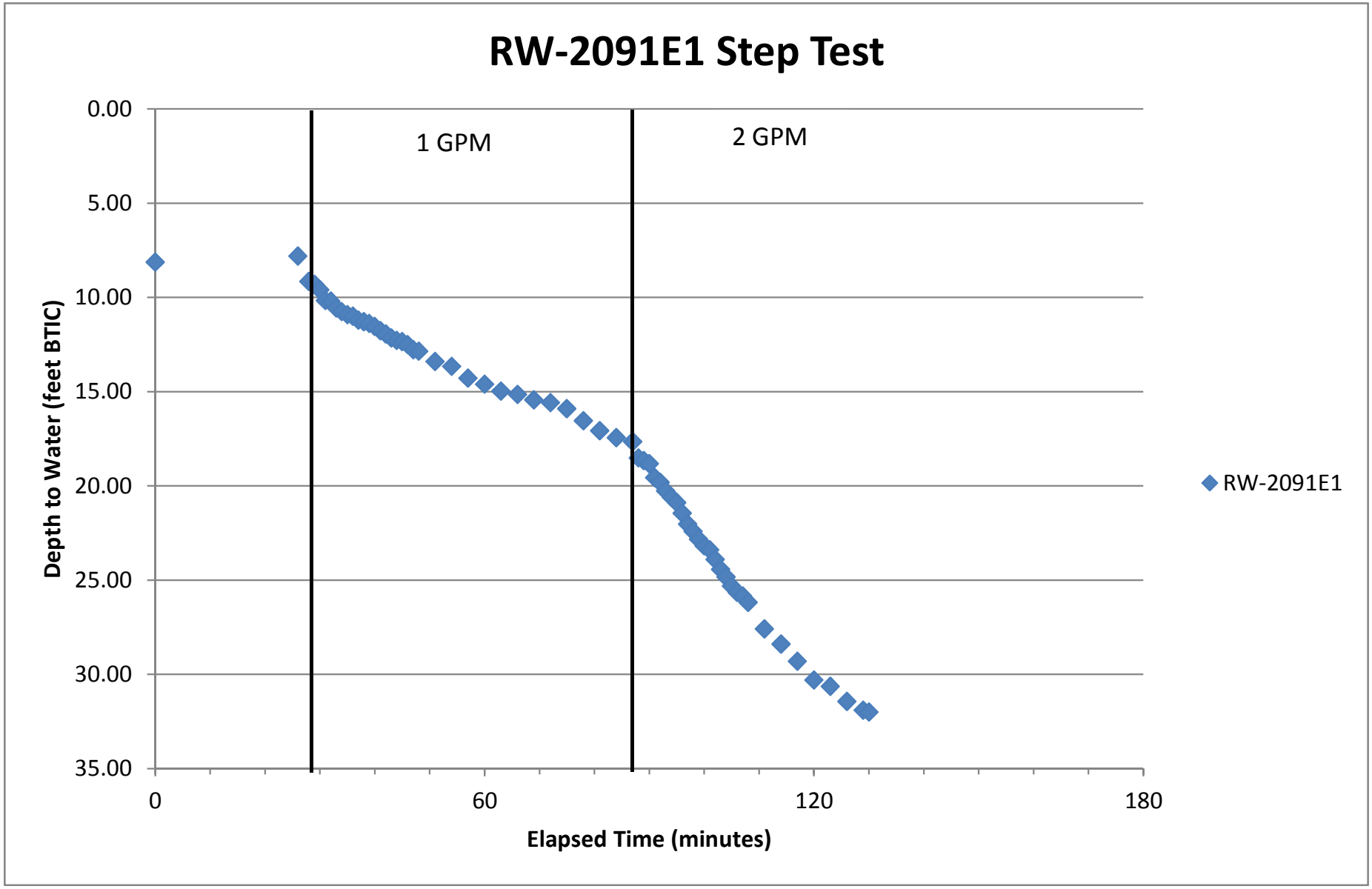

RW-2090DR Step Test
1 GPM
2 GPM
4 GPM
5 GPM
Depth to Water (feet BTIC)
0
2
4
6
8
10
12
14
16
18
0
60
120
180
240
300
360
420
Elapsed Time (minutes)
RW-2090DR

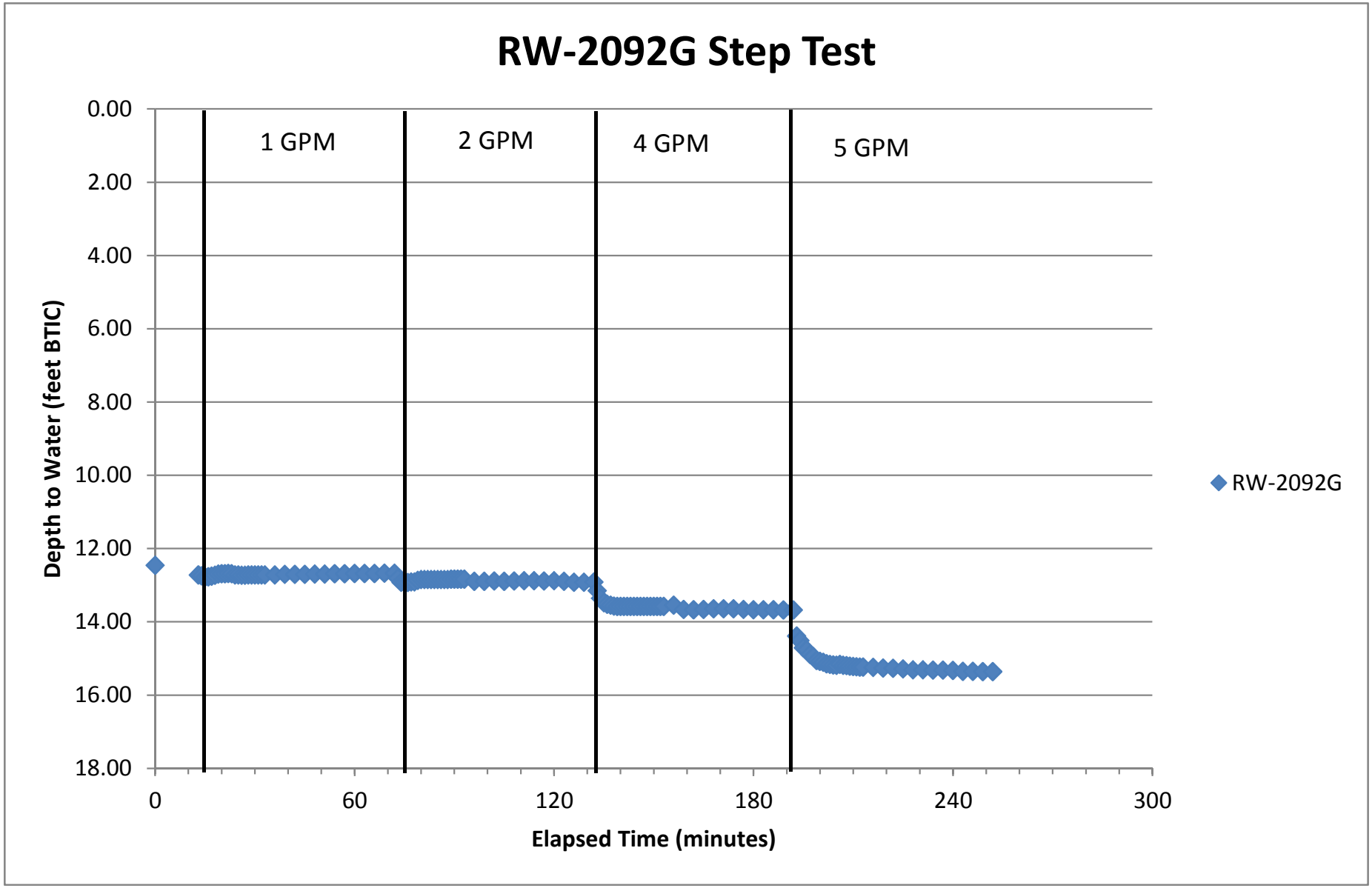

RW-2090E1 Step Test
1 GPM
2 GPM
4 GPM
5 GPM
0.00
5.00
10.00
15.00
20.00
25.00
Depth to Water (feet BTIC)
0
60
120
180
240
300
Elapsed Time (minutes)
RW-2090E1

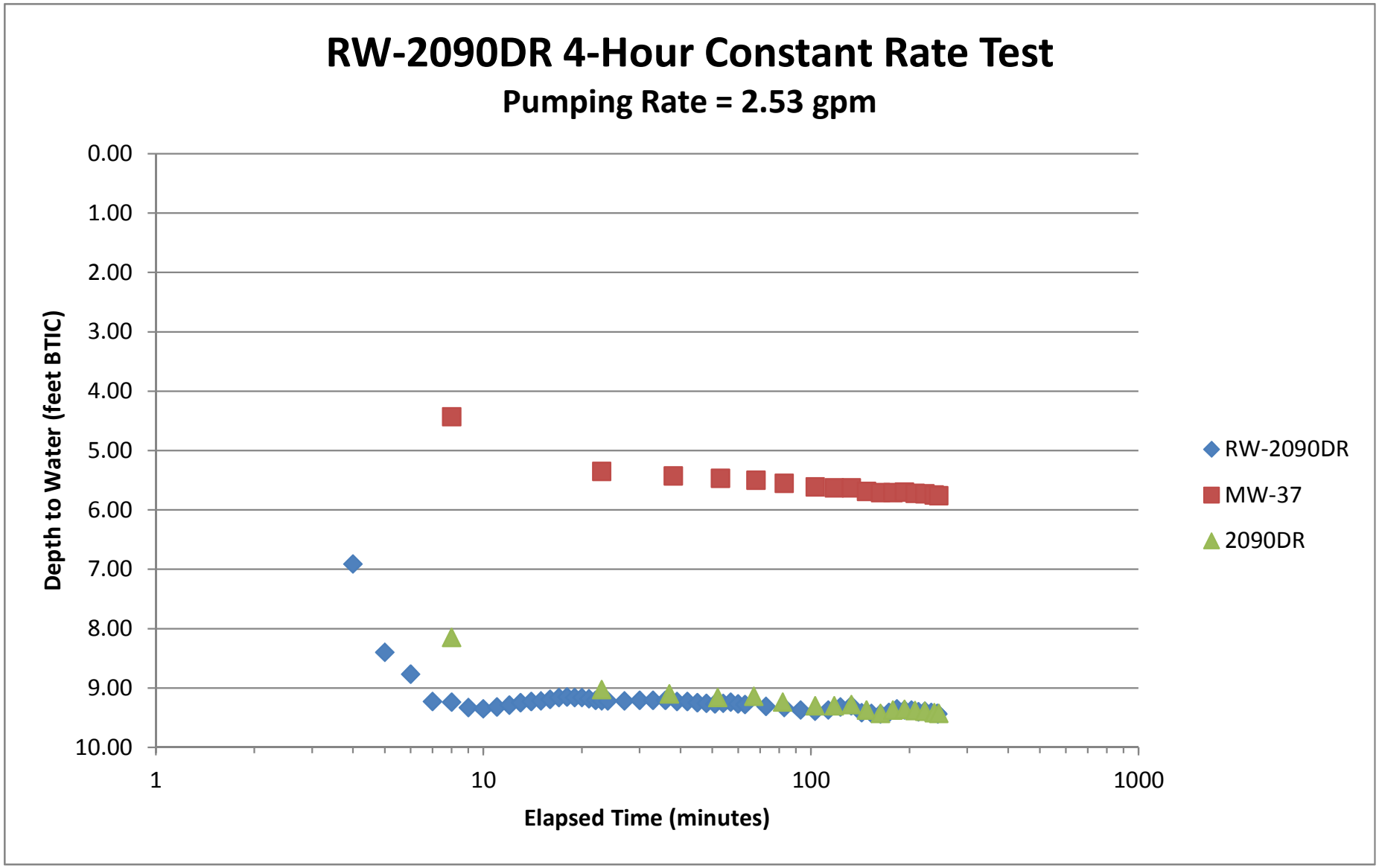

RW-2090ER Step Test
1 GPM
2 GPM
4 GPM
5 GPM
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
45.00
Depth to Water (feet BTIC)
0
60
120
180
240
Elapsed Time (minutes)
RW-2090ER

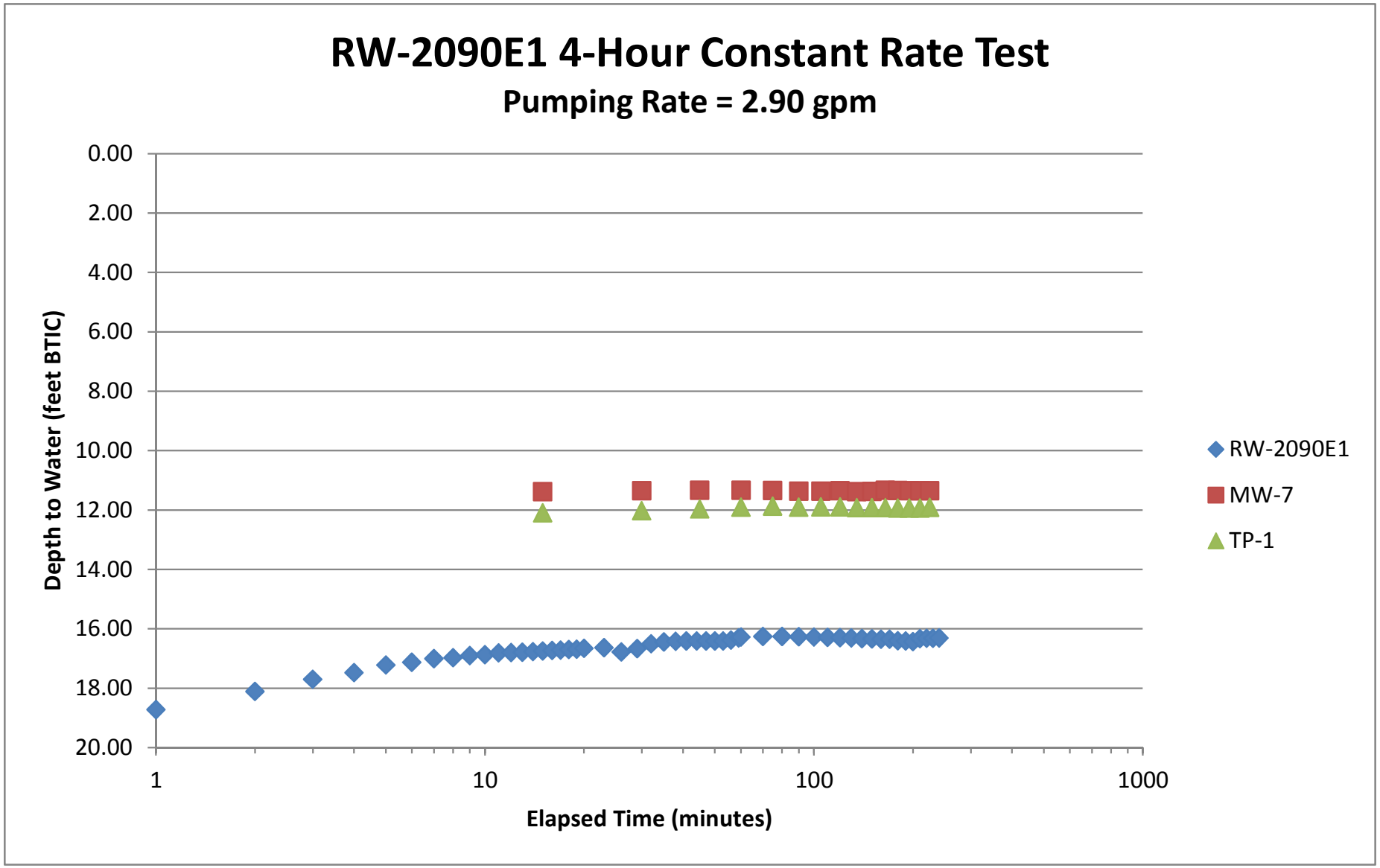

RW-2090FR Step Test
1 GPM
2 GPM
4 GPM
5 GPM
0.00
5.00
10.00
15.00
20.00
25.00
Depth to Water (feet BTIC)
0
60
120
180
240
300
Elapsed Time (minutes)
RW-2090FR

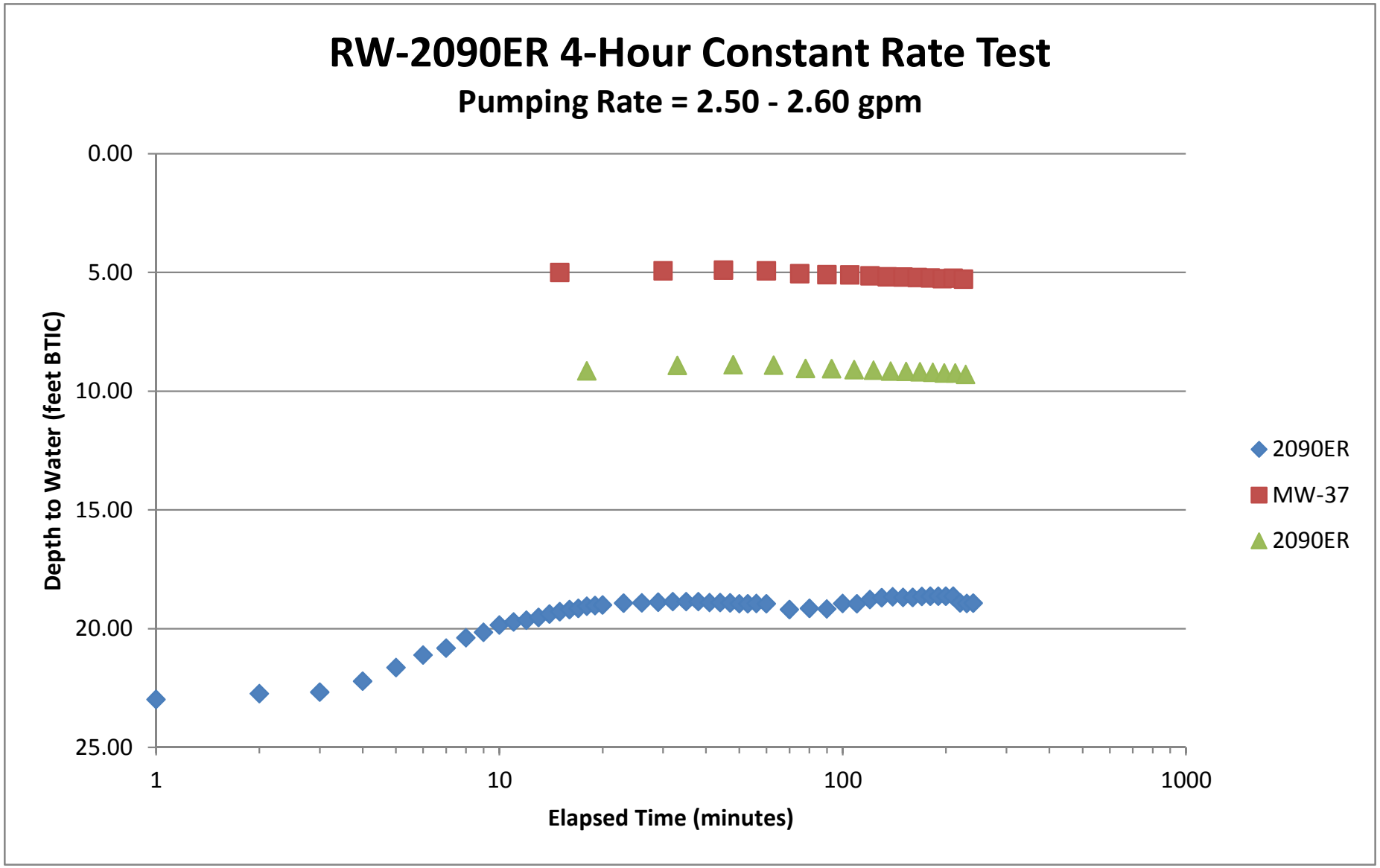

RW-2091A1 Step Test
1 GPM
2 GPM
4 GPM
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
Depth to Water (feet BTIC)
0
60
120
180
Elapsed Time (minutes)
RW-2091A1

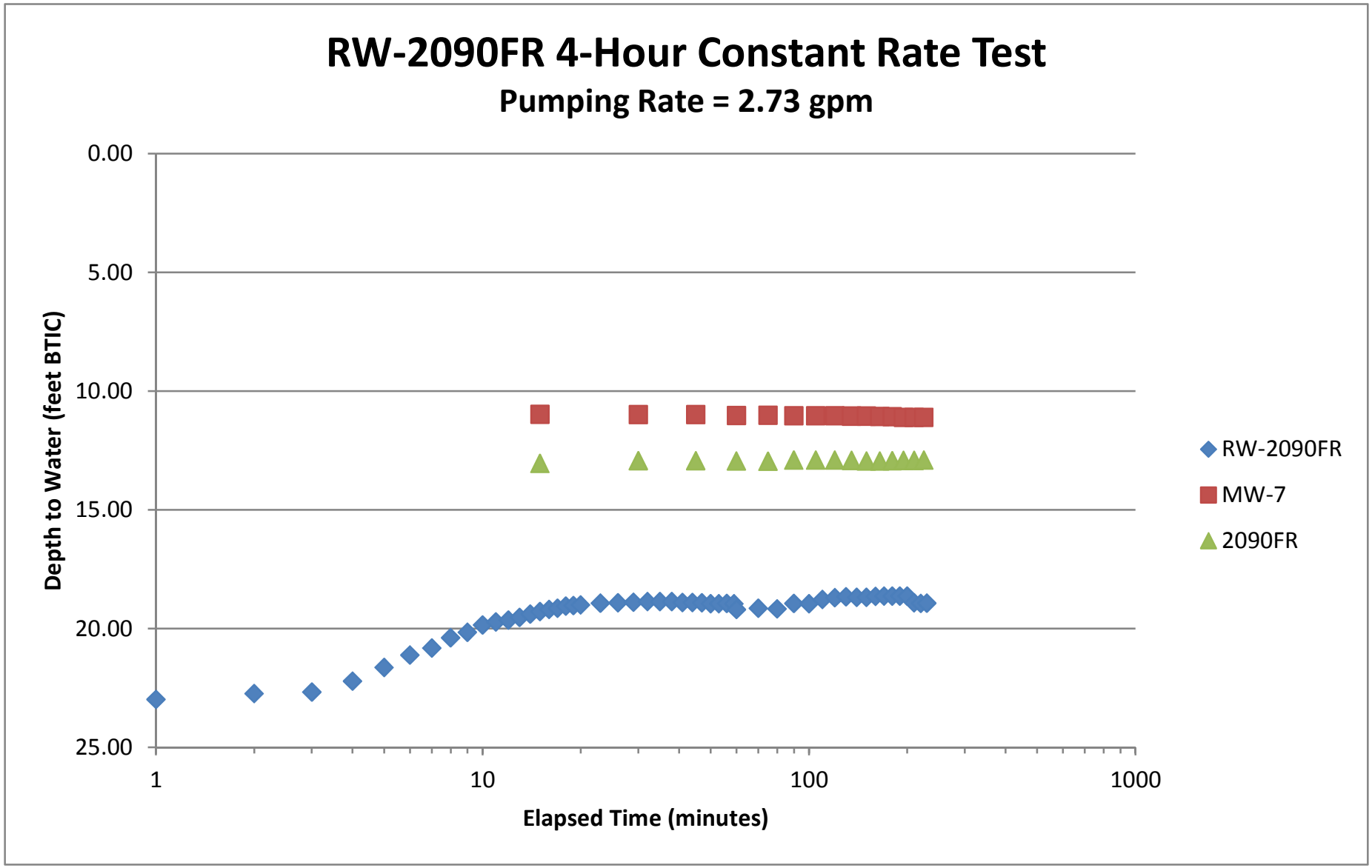

RW-2091E1 Step Test
1 GPM
2 GPM
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Depth to Water (feet BTIC)
0
60
120
180
Elapsed Time (minutes)
RW-2091E1

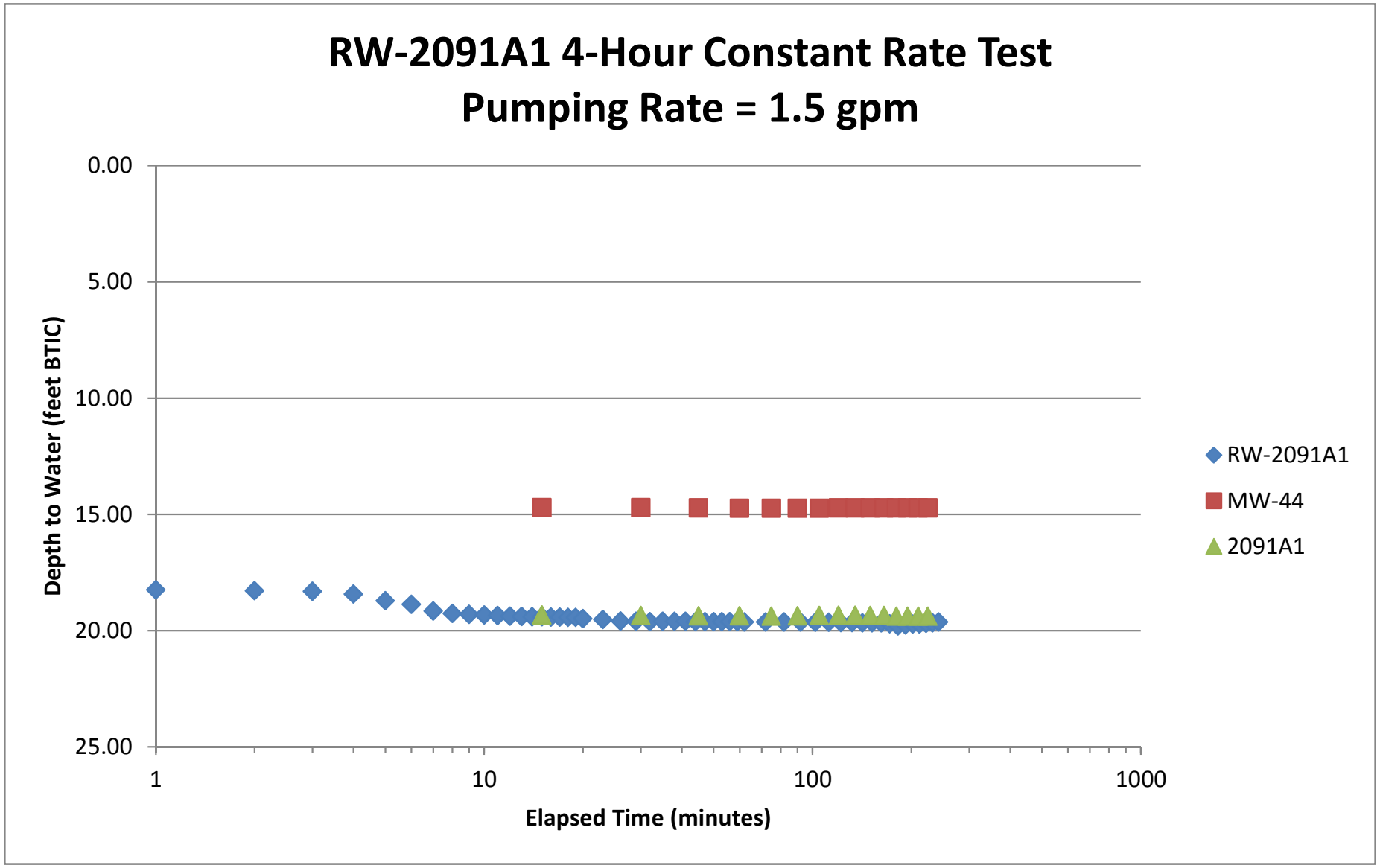

RW-2092G Step Test
1 GPM
2 GPM
4 GPM
5 GPM
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
Depth to Water (feet BTIC)
0
60
120
180
240
300
Elapsed Time (minutes)
RW-2092G

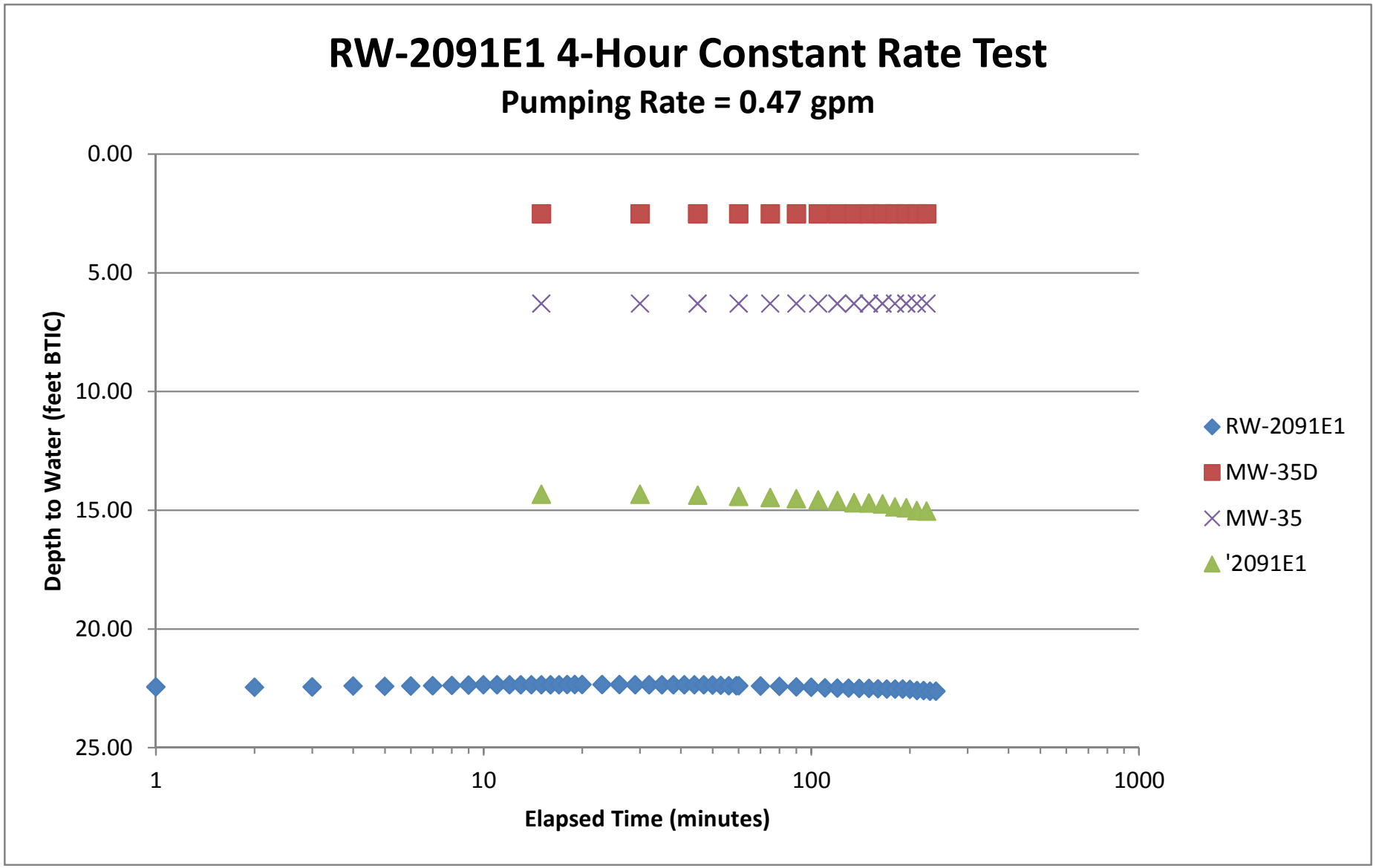

RW-2090DR 4-Hour Constant Rate Test
Pumping Rate = 2.53 gpm
Depth to Water (feet BTIC)
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090DR
MW-37
2090DR

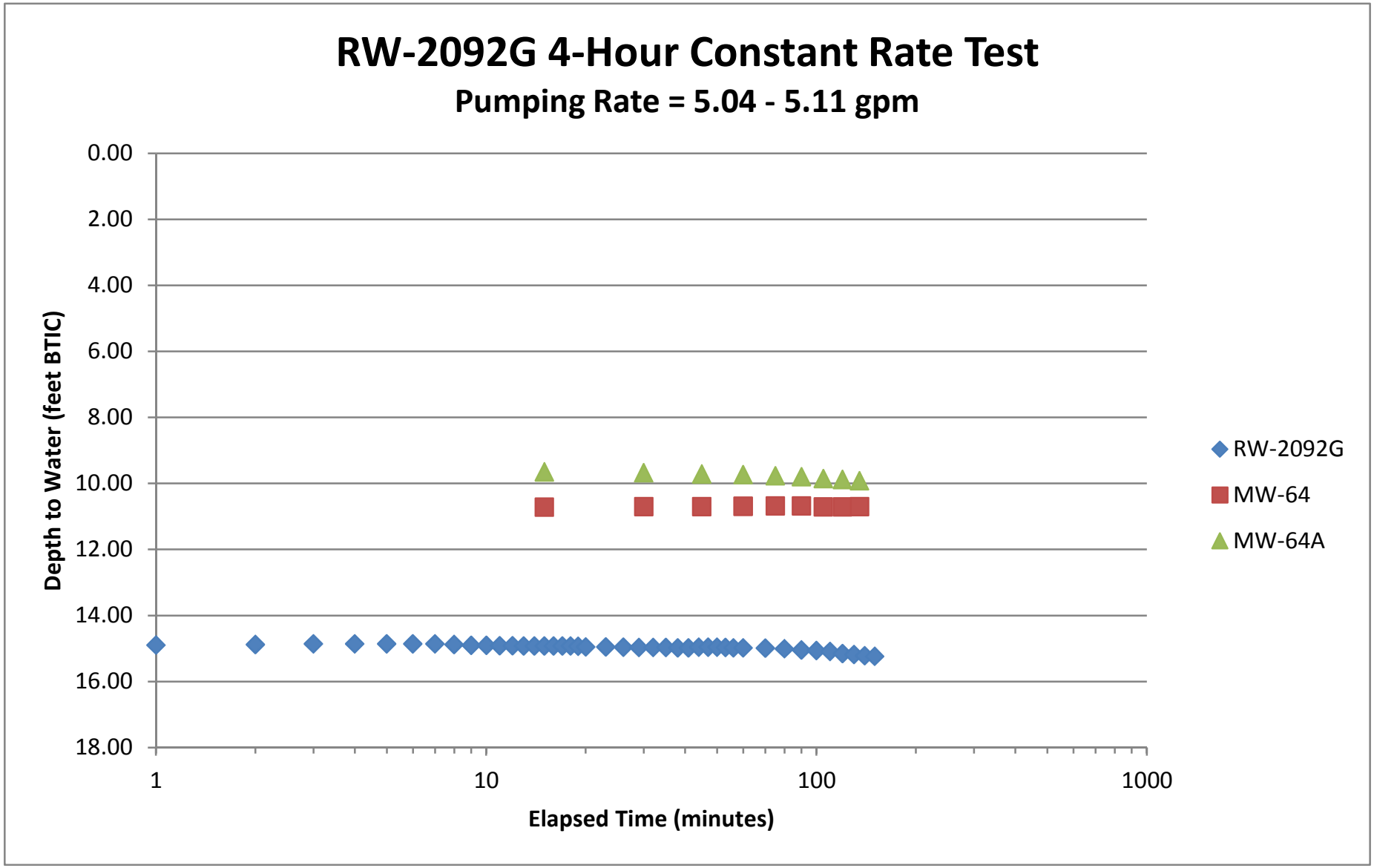

RW-2090E1 4-Hour Constant Rate Test
Pumping Rate = 2.90 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090E1
MW-7
TP-1

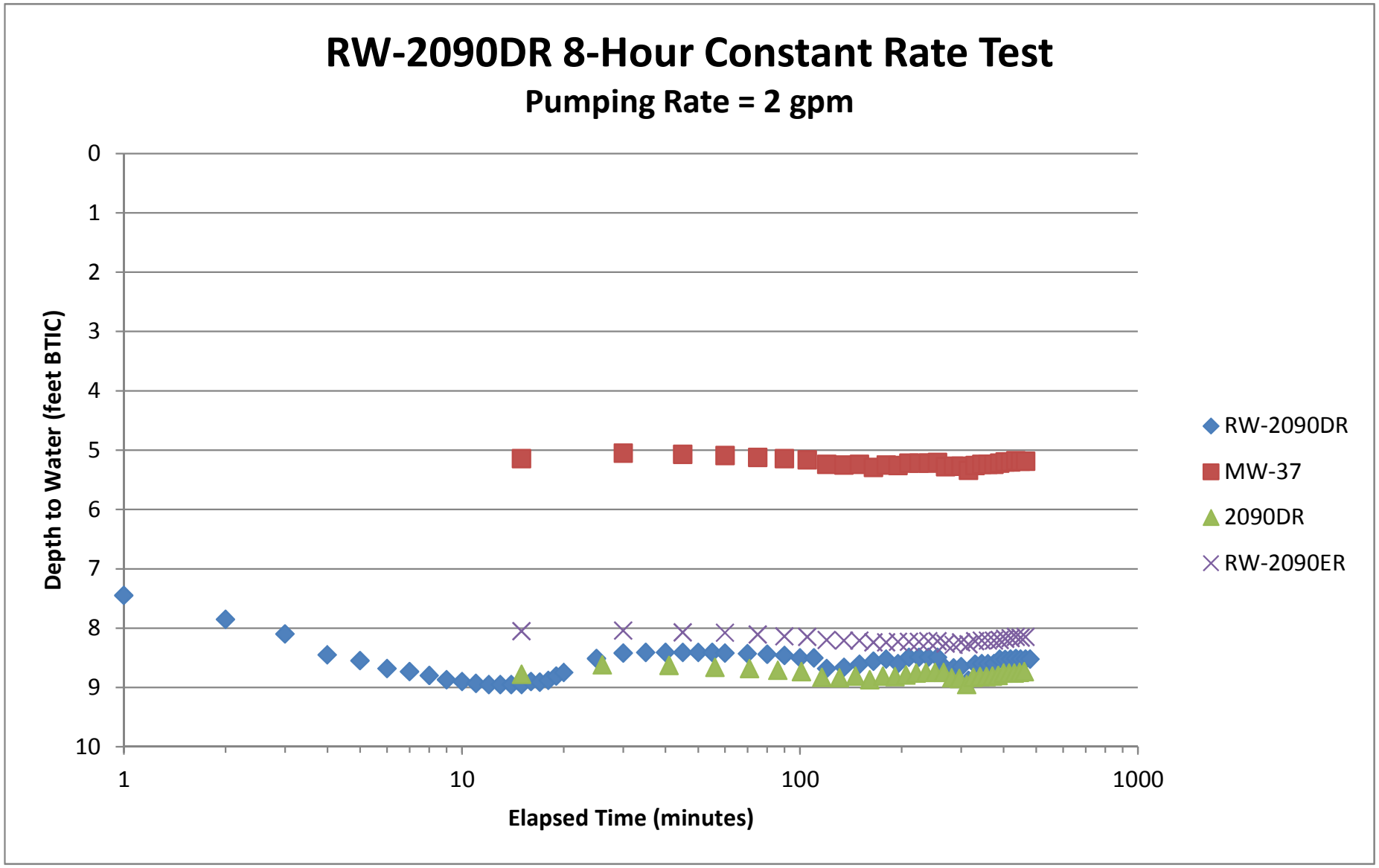

RW-2090ER 4-Hour Constant Rate Test
Pumping Rate = 2.50 - 2.60 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
1
10
100
1000
Elapsed Time (minutes)
2090ER
MW-37
2090ER

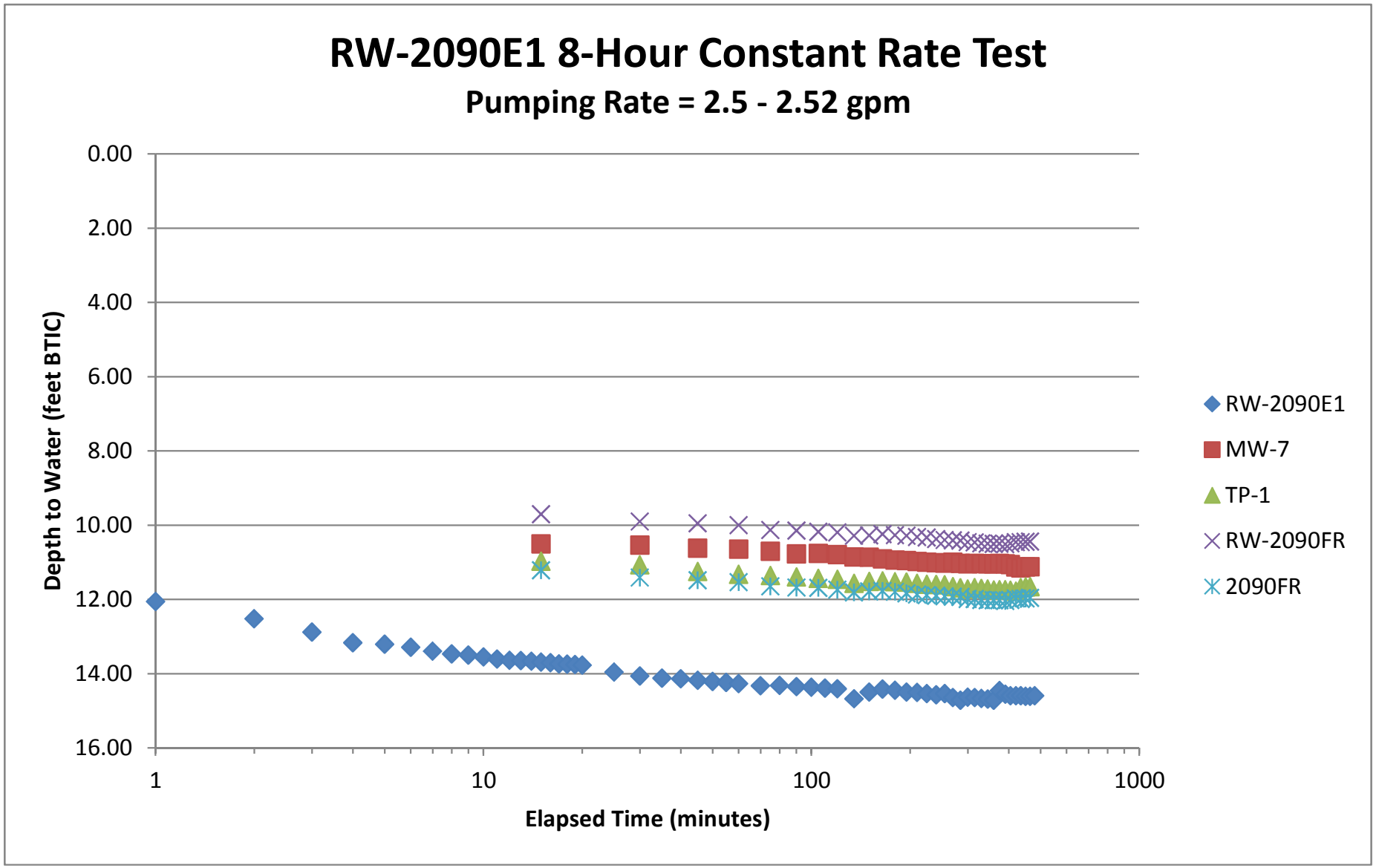

RW-2090FR 4-Hour Constant Rate Test
Pumping Rate = 2.73 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090FR
MW-7
2090FR

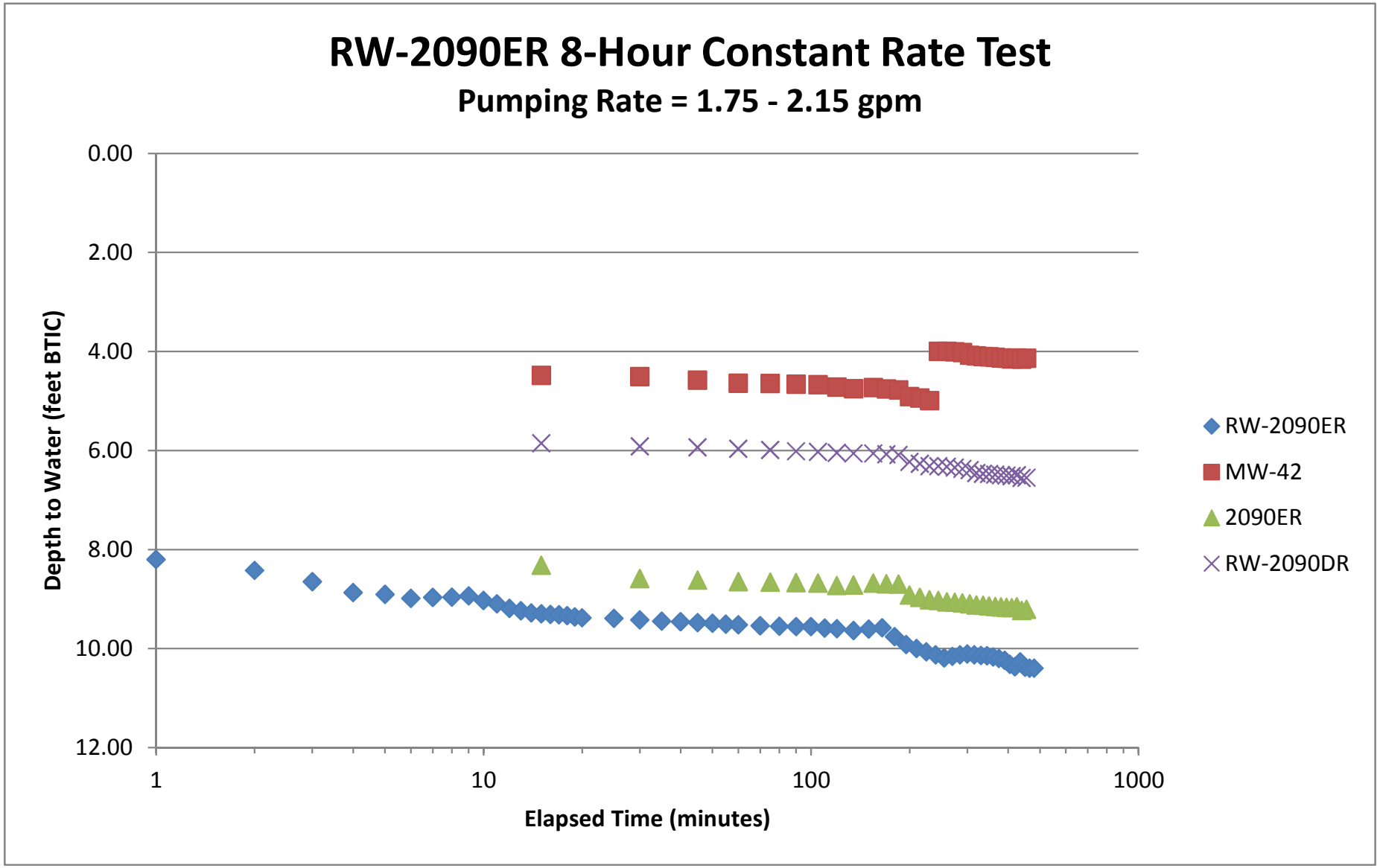

RW-2091A1 4-Hour Constant Rate Test
Pumping Rate = 1.5 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
1
10
100
1000
Elapsed Time (minutes)
RW-2091A1
MW-44
2091A1

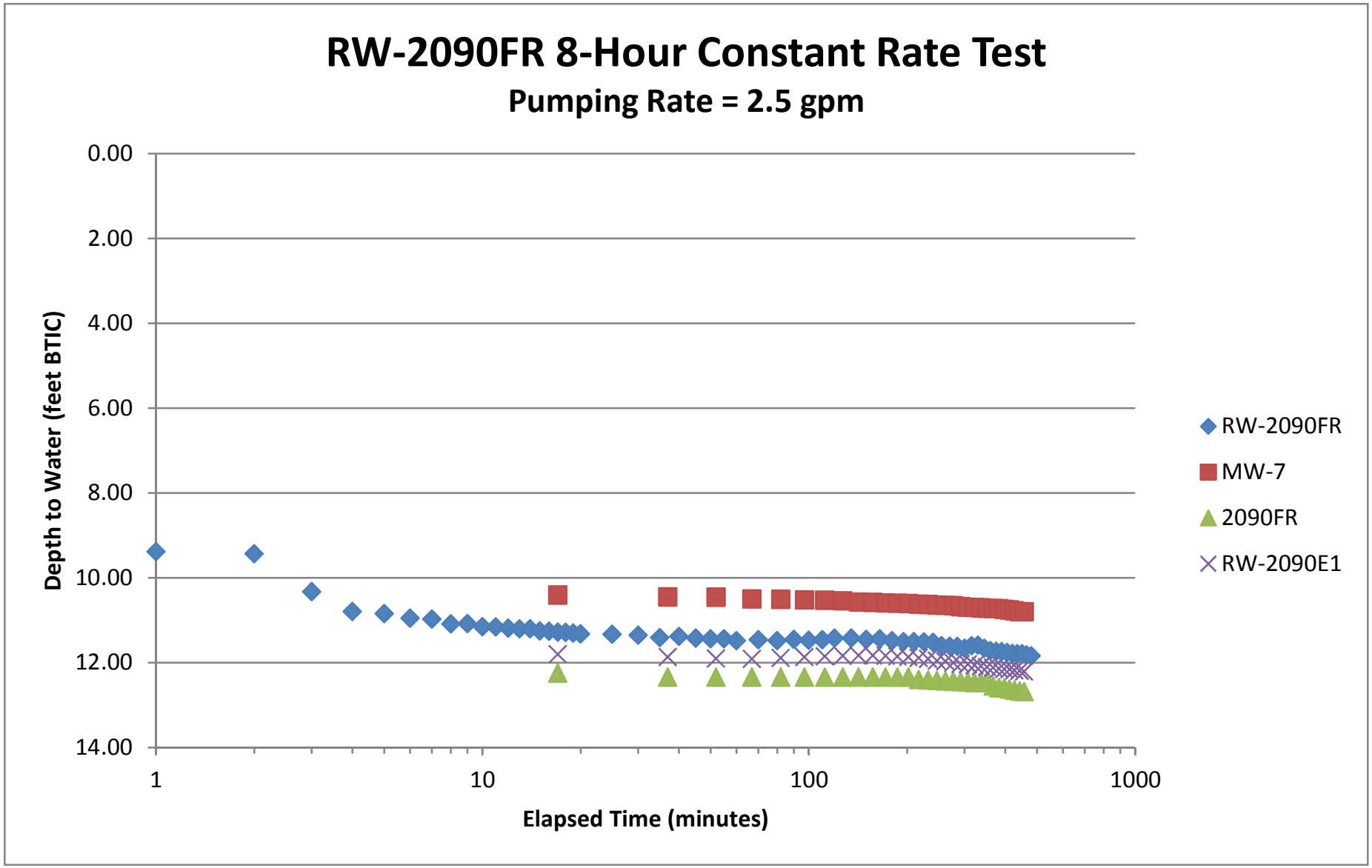

RW-2091E1 4-Hour Constant Rate Test
Pumping Rate = 0.47 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
1
10
100
1000
Elapsed Time (minutes)
RW-2091E1
MW-35D
MW-35
'2091E1

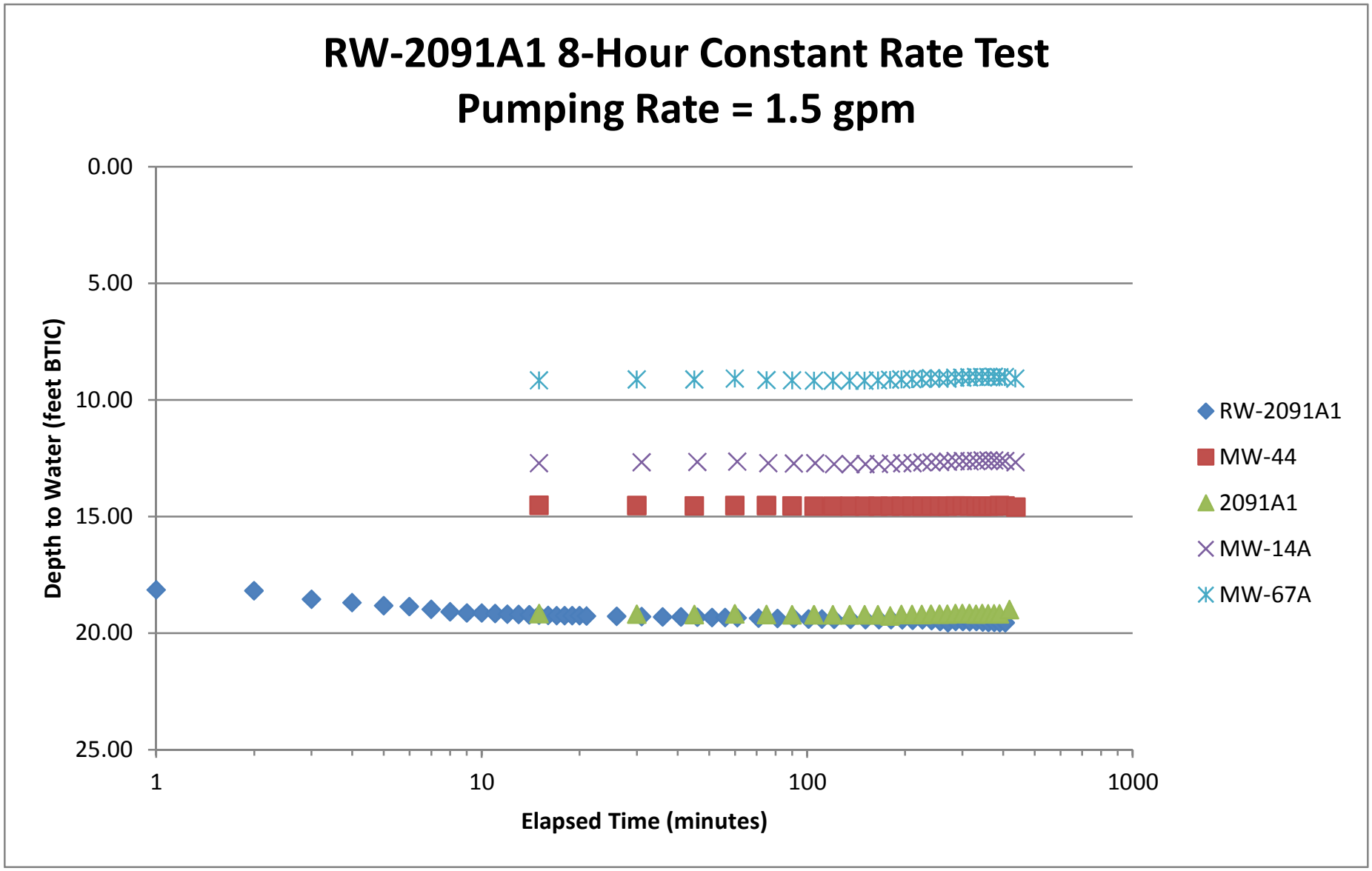

RW-2092G 4-Hour Constant Rate Test
Pumping Rate = 5.04 - 5.11 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
1
10
100
1000
Elapsed Time (minutes)
RW-2092G
MW-64
MW-64A

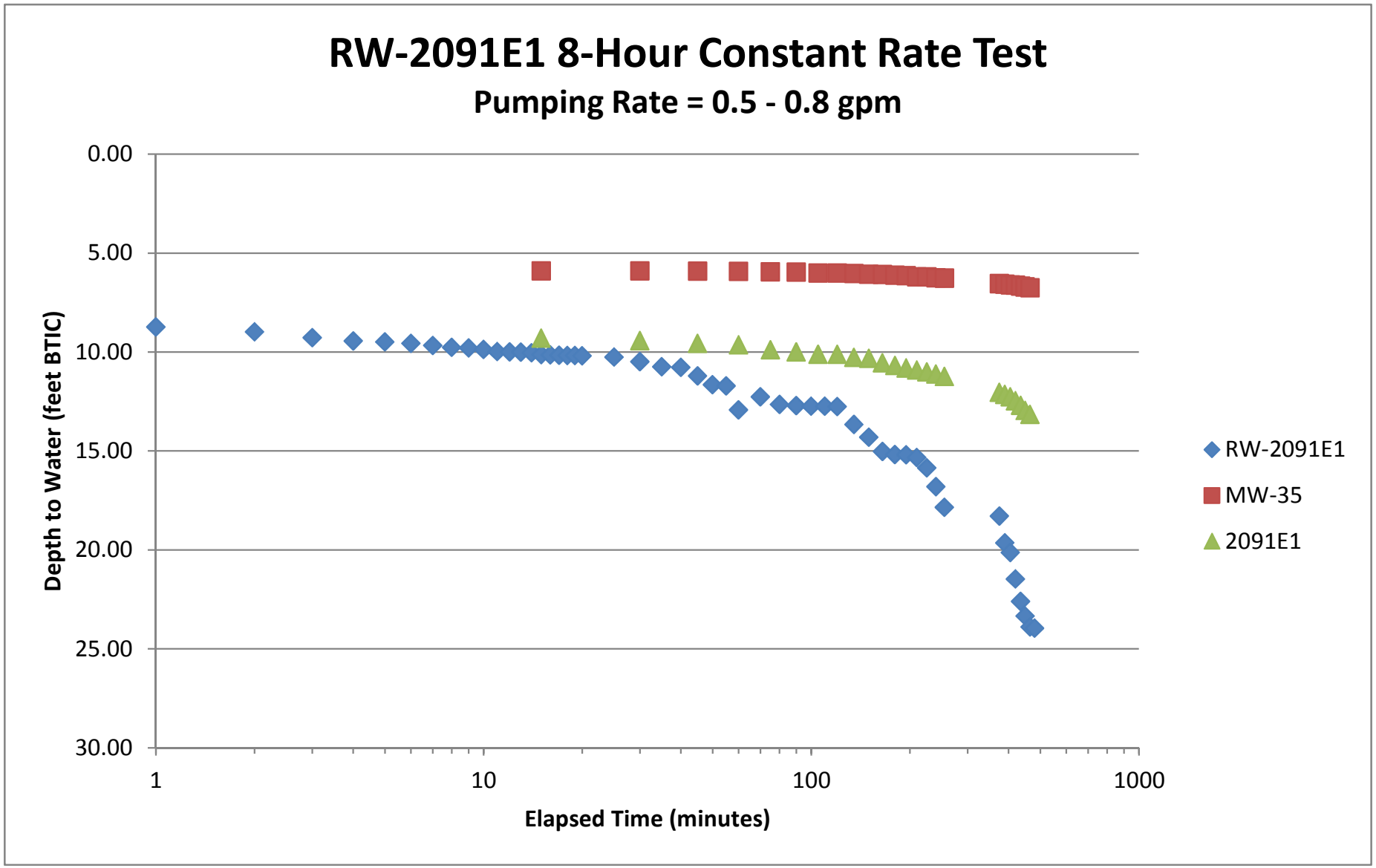

RW-2090DR 8-Hour Constant Rate Test
Pumping Rate = 2 gpm
Depth to Water (feet BTIC)
0
1
2
3
4
5
6
7
8
9
10
1
10
100
1000
Elapsed Time (minutes)
RW-2090DR
MW-37
2090DR
RW-2090ER

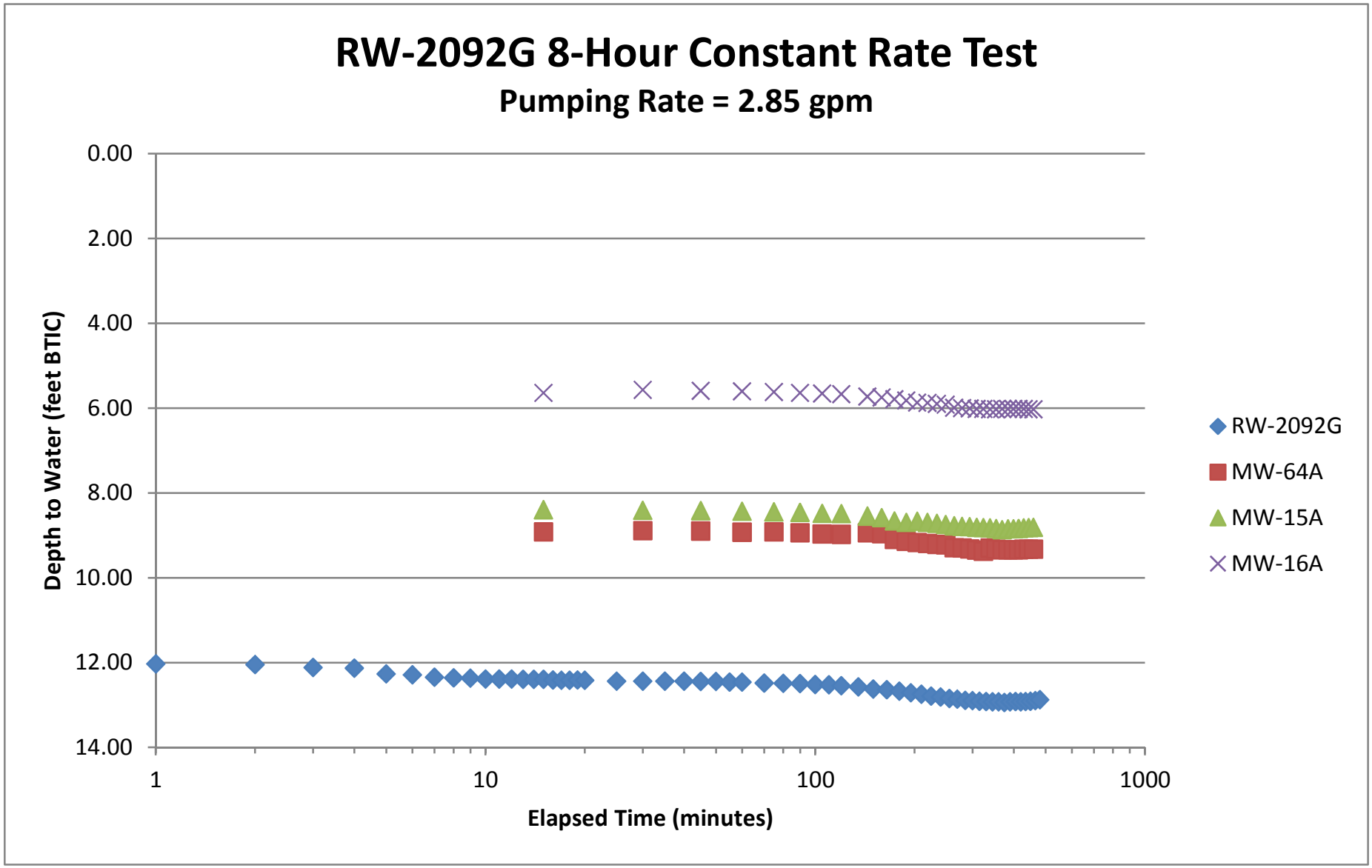

RW-2090E1 8-Hour Constant Rate Test
Pumping Rate = 2.5 - 2.52 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090E1
MW-7
TP-1
RW-2090FR
2090FR


RW-2090ER 8-Hour Constant Rate Test
Pumping Rate = 1.75 - 2.15 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090ER
MW-42
2090ER
RW-2090DR


RW-2090FR 8-Hour Constant Rate Test
Pumping Rate = 2.5 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
1
10
100
1000
Elapsed Time (minutes)
RW-2090FR
MW-7
2090FR
RW-2090E1


RW-2091A1 8-Hour Constant Rate Test
Pumping Rate = 1.5 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
1
10
100
1000
Elapsed Time (minutes)
RW-2091A1
MW-44
2091A1
MW-14A
MW-67A


RW-2091E1 8-Hour Constant Rate Test
Pumping Rate = 0.5 - 0.8 gpm
Depth to Water (feet BTIC)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
1
10
100
1000
Elapsed Time (minutes)
RW-2091E1
MW-35
2091E1


RW-2092G 8-Hour Constant Rate Test
Pumping Rate = 2.85 gpm
Depth to Water (feet BTIC)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
1
10
100
1000
Elapsed Time (minutes)
RW-2092G
MW-64A
MW-15A
MW-16A

APPENDIX G

INVESTIGATION DERIVED WASTE LABORATORY TEST REPORTS

Analytical Report for

ERM, Inc. - Annapolis

Certificate of Analysis No.: 17082325

Project Manager: Lindsey France
Project Name : FMC Baltimore
Project Location: Baltimore, MD
Project ID : 0414901

October 10, 2017

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

October 10, 2017

Lindsey France
ERM, Inc. - Annapolis
180 Admiral Cochrane Drive Suite 400
Annapolis, MD 21401

Reference: PSS Work Order(s) No: **17082325**
Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID.: 0414901

Dear Lindsey France :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **17082325**. This report has been revised to report N-Nitrosodiphenylamine. This report version includes revised sample results. This report cancels and supersedes report version 1.001 dated September 7, 2017.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 27, 2017, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: ERM, Inc. - Annapolis
Project Name: FMC Baltimore

Work Order Number(s): 17082325

Project ID: 0414901

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/23/2017 at 04:10 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
17082325-001	SP-1	SOIL	08/23/17 08:03
17082325-002	SP-2	SOIL	08/23/17 09:00
17082325-003	SP-3	SOIL	08/23/17 09:30
17082325-004	MP-1	SOIL	08/23/17 08:34
17082325-005	SP-1 Grab 1	SOIL	08/23/17 08:03
17082325-006	SP-1 Grab 2	SOIL	08/23/17 08:03
17082325-007	SP-1 Grab 3	SOIL	08/23/17 08:03
17082325-008	MP-1 Grab 1	SOIL	08/23/17 08:34
17082325-009	MP-1 Grab 2	SOIL	08/23/17 08:34
17082325-010	MP-1 Grab 3	SOIL	08/23/17 08:34
17082325-011	SP-2 Grab 1	SOIL	08/23/17 09:00
17082325-012	SP-2 Grab 2	SOIL	08/23/17 09:00
17082325-013	SP-2 Grab 3	SOIL	08/23/17 09:00
17082325-014	SP-3 Grab 1	SOIL	08/23/17 09:30
17082325-015	SP-3 Grab 2	SOIL	08/23/17 09:30
17082325-016	SP-3 Grab 3	SOIL	08/23/17 09:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Sample Summary

Client Name: ERM, Inc. - Annapolis
Project Name: FMC Baltimore

Work Order Number(s): 17082325

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-001**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 75**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Arsenic	**5.3**	mg/kg	0.53		1	0.27	08/24/17	08/25/17 01:49	1051
Beryllium	ND	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Cadmium	ND	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Chromium	**52**	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Copper	**24**	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Lead	**16**	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Mercury	**0.085**	mg/kg	0.11	J	1	0.053	08/24/17	08/25/17 01:49	1051
Nickel	**13**	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Selenium	ND	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Silver	ND	mg/kg	2.7		1	1.3	08/24/17	08/25/17 01:49	1051
Thallium	ND	mg/kg	2.1		1	1.1	08/24/17	08/25/17 01:49	1051
Zinc	**29**	mg/kg	11		1	5.3	08/24/17	08/25/17 01:49	1051

SVOC (Additional Compounds) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	MDL	Prepared	Analyzed	Analyst
p-(Dimethylamino)azobenzene	ND	ug/kg	384		80.5	09/01/17	09/06/17 22:50	4001
Pentachlorobenzene	ND	ug/kg	128		14.1	09/01/17	09/06/17 22:50	4001

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-001**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 75**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Acenaphthylene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Anthracene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Benzidine	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Benzo(a)anthracene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Benzo(a)pyrene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Benzo(b)fluoranthene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Benzo(g,h,i)perylene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Benzo(k)fluoranthene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Butyl benzyl phthalate	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
bis(2-chloroethoxy) methane	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
bis(2-chloroethyl) ether	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Bromophenylphenyl ether	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Di-n-butyl phthalate	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Carbazole	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Chloro-3-methylphenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Chloroaniline	ND	ug/kg	220		1	220	08/29/17	08/29/17 21:43	1055
2-Chloronaphthalene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2-Chlorophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Chrysene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Dibenz(a,h)anthracene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Dibenzofuran	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
3,3-Dichlorobenzidine	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2,4-Dichlorophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Diethyl phthalate	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Dimethyl phthalate	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2,4-Dimethylphenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS
No: 17082325
ERM, Inc. - Annapolis, Annapolis, MD
October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 **Date/Time Sampled: 08/23/2017 08:03** **PSS Sample ID: 17082325-001**
Matrix: SOIL **Date/Time Received: 08/23/2017 16:10** **% Solids: 75**

SVOCs (Project Specific List) Analytical Method: SW-846 8270 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2,4-Dinitrophenol	ND	ug/kg	450		1	220	08/29/17	08/29/17 21:43	1055
2,4-Dinitrotoluene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2,6-Dinitrotoluene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
1,2-Diphenylhydrazine	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Fluoranthene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Fluorene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Hexachlorobenzene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Hexachlorobutadiene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Hexachlorocyclopentadiene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Hexachloroethane	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Isophorone	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2-Methylnaphthalene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
2-Methylphenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
3&4-Methylphenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Naphthalene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
2-Nitroaniline	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
3-Nitroaniline	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Nitroaniline	ND	ug/kg	220		1	220	08/29/17	08/29/17 21:43	1055
Nitrobenzene	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2-Nitrophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
4-Nitrophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
N-Nitrosodiphenylamine	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Di-n-octyl phthalate	ND	ug/kg	220		1	220	08/29/17	08/29/17 21:43	1055
Pentachlorophenol	ND	ug/kg	220		1	220	08/29/17	08/29/17 21:43	1055
Phenanthrene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055
Phenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
Pyrene	ND	ug/kg	22		1	22	08/29/17	08/29/17 21:43	1055

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-001**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 75**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4,5-Trichlorophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055
2,4,6-Trichlorophenol	ND	ug/kg	220		1	110	08/29/17	08/29/17 21:43	1055

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
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410-747-8770
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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-002**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 78**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Arsenic	**3.9**	mg/kg	0.58		1	0.29	08/24/17	08/25/17 01:56	1051
Beryllium	ND	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Cadmium	ND	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Chromium	**39**	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Copper	**21**	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Lead	**11**	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Mercury	ND	mg/kg	0.12		1	0.058	08/24/17	08/25/17 01:56	1051
Nickel	**7.1**	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Selenium	ND	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Silver	ND	mg/kg	2.9		1	1.4	08/24/17	08/25/17 01:56	1051
Thallium	ND	mg/kg	2.3		1	1.2	08/24/17	08/25/17 01:56	1051
Zinc	**14**	mg/kg	12		1	5.8	08/24/17	08/25/17 01:56	1051

SVOC (Additional Compounds) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	MDL	Prepared	Analyzed	Analyst
p-(Dimethylamino)azobenzene	ND	ug/kg	411		86.3	09/01/17	09/06/17 23:17	4001
Pentachlorobenzene	**18.0**	ug/kg	137	J	15.1	09/01/17	09/06/17 23:17	4001

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
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410-747-8770
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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-002**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 78**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Acenaphthylene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Anthracene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Benzidine	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Benzo(a)anthracene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Benzo(a)pyrene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Benzo(b)fluoranthene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Benzo(g,h,i)perylene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Benzo(k)fluoranthene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Butyl benzyl phthalate	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
bis(2-chloroethoxy) methane	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
bis(2-chloroethyl) ether	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Bromophenylphenyl ether	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Di-n-butyl phthalate	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Carbazole	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Chloro-3-methylphenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Chloroaniline	ND	ug/kg	210		1	210	08/29/17	08/29/17 23:46	1055
2-Chloronaphthalene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2-Chlorophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Chrysene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Dibenz(a,h)anthracene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Dibenzofuran	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
3,3-Dichlorobenzidine	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2,4-Dichlorophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Diethyl phthalate	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Dimethyl phthalate	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2,4-Dimethylphenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-002**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 78**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2,4-Dinitrophenol	ND	ug/kg	420		1	210	08/29/17	08/29/17 23:46	1055
2,4-Dinitrotoluene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2,6-Dinitrotoluene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
1,2-Diphenylhydrazine	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Fluoranthene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Fluorene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Hexachlorobenzene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Hexachlorobutadiene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Hexachlorocyclopentadiene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Hexachloroethane	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Isophorone	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2-Methylnaphthalene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
2-Methylphenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
3&4-Methylphenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Naphthalene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
2-Nitroaniline	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
3-Nitroaniline	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Nitroaniline	ND	ug/kg	210		1	210	08/29/17	08/29/17 23:46	1055
Nitrobenzene	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2-Nitrophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
4-Nitrophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
N-Nitrosodiphenylamine	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Di-n-octyl phthalate	ND	ug/kg	210		1	210	08/29/17	08/29/17 23:46	1055
Pentachlorophenol	ND	ug/kg	210		1	210	08/29/17	08/29/17 23:46	1055
Phenanthrene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055
Phenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
Pyrene	ND	ug/kg	21		1	21	08/29/17	08/29/17 23:46	1055

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2	**Date/Time Sampled: 08/23/2017 09:00**	**PSS Sample ID: 17082325-002**
Matrix: SOIL	**Date/Time Received: 08/23/2017 16:10**	**% Solids: 78**

SVOCs (Project Specific List) Analytical Method: SW-846 8270 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4,5-Trichlorophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055
2,4,6-Trichlorophenol	ND	ug/kg	210		1	110	08/29/17	08/29/17 23:46	1055

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ROUTE 40 WEST
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800-932-9047
FAX 410-788-8723

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-003**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Arsenic	**2.1**	mg/kg	0.50		1	0.25	08/24/17	08/25/17 02:28	1051
Beryllium	ND	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Cadmium	ND	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Chromium	**8.1**	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Copper	**12**	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Lead	**4.0**	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Mercury	ND	mg/kg	0.099		1	0.05	08/24/17	08/25/17 02:28	1051
Nickel	**2.4**	mg/kg	2.5	J	1	1.2	08/24/17	08/25/17 02:28	1051
Selenium	ND	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Silver	ND	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:28	1051
Thallium	ND	mg/kg	2.0		1	0.99	08/24/17	08/25/17 02:28	1051
Zinc	**12**	mg/kg	9.9		1	5	08/24/17	08/25/17 02:28	1051

SVOC (Additional Compounds) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	MDL	Prepared	Analyzed	Analyst
p-(Dimethylamino)azobenzene	ND	ug/kg	415		87.2	09/01/17	09/06/17 23:43	4001
Pentachlorobenzene	ND	ug/kg	138		15.2	09/01/17	09/06/17 23:43	4001

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ROUTE 40 WEST
BALTIMORE, MD 21228
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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS
No: 17082325
ERM, Inc. - Annapolis, Annapolis, MD
October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-003**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Acenaphthylene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Anthracene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Benzidine	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Benzo(a)anthracene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Benzo(a)pyrene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Benzo(b)fluoranthene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Benzo(g,h,i)perylene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Benzo(k)fluoranthene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Butyl benzyl phthalate	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
bis(2-chloroethoxy) methane	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
bis(2-chloroethyl) ether	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Bromophenylphenyl ether	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Di-n-butyl phthalate	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Carbazole	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Chloro-3-methylphenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Chloroaniline	ND	ug/kg	240		1	240	08/29/17	08/29/17 22:14	1055
2-Chloronaphthalene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2-Chlorophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Chrysene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Dibenz(a,h)anthracene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Dibenzofuran	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
3,3-Dichlorobenzidine	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2,4-Dichlorophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Diethyl phthalate	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Dimethyl phthalate	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2,4-Dimethylphenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-003**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2,4-Dinitrophenol	ND	ug/kg	470		1	240	08/29/17	08/29/17 22:14	1055
2,4-Dinitrotoluene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2,6-Dinitrotoluene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
1,2-Diphenylhydrazine	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Fluoranthene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Fluorene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Hexachlorobenzene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Hexachlorobutadiene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Hexachlorocyclopentadiene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Hexachloroethane	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Isophorone	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2-Methylnaphthalene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
2-Methylphenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
3&4-Methylphenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Naphthalene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
2-Nitroaniline	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
3-Nitroaniline	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Nitroaniline	ND	ug/kg	240		1	240	08/29/17	08/29/17 22:14	1055
Nitrobenzene	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2-Nitrophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
4-Nitrophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
N-Nitrosodiphenylamine	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Di-n-octyl phthalate	ND	ug/kg	240		1	240	08/29/17	08/29/17 22:14	1055
Pentachlorophenol	ND	ug/kg	240		1	240	08/29/17	08/29/17 22:14	1055
Phenanthrene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055
Phenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
Pyrene	ND	ug/kg	24		1	24	08/29/17	08/29/17 22:14	1055

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-003**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4,5-Trichlorophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055
2,4,6-Trichlorophenol	ND	ug/kg	240		1	120	08/29/17	08/29/17 22:14	1055

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ROUTE 40 WEST
BALTIMORE, MD 21228
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800-932-9047
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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-004**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 15**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Arsenic	**15**	mg/kg	2.5		1	1.2	08/24/17	08/25/17 02:35	1051
Beryllium	ND	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Cadmium	ND	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Chromium	**200**	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Copper	**81**	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Lead	**37**	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Mercury	ND	mg/kg	0.50		1	0.25	08/24/17	08/25/17 02:35	1051
Nickel	**99**	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Selenium	ND	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Silver	ND	mg/kg	12		1	6.2	08/24/17	08/25/17 02:35	1051
Thallium	ND	mg/kg	9.9		1	5	08/24/17	08/25/17 02:35	1051
Zinc	**220**	mg/kg	50		1	25	08/24/17	08/25/17 02:35	1051

SVOC (Additional Compounds) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	MDL	Prepared	Analyzed	Analyst
p-(Dimethylamino)azobenzene	ND	ug/kg	6,700		1,410	09/01/17	09/07/17 00:10	4001
Pentachlorobenzene	ND	ug/kg	2,230		246	09/01/17	09/07/17 00:10	4001

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-004**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 15**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Acenaphthylene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Anthracene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Benzidine	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Benzo(a)anthracene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Benzo(a)pyrene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Benzo(b)fluoranthene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Benzo(g,h,i)perylene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Benzo(k)fluoranthene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Butyl benzyl phthalate	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Di-n-butyl phthalate	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Carbazole	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Chloroaniline	ND	ug/kg	1,100		1	1,100	08/29/17	08/29/17 22:44	1055
2-Chloronaphthalene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2-Chlorophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Chrysene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Dibenz(a,h)anthracene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Dibenzofuran	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2,4-Dichlorophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Diethyl phthalate	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Dimethyl phthalate	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2,4-Dimethylphenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-004**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 15**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2,4-Dinitrophenol	ND	ug/kg	2,200		1	1,100	08/29/17	08/29/17 22:44	1055
2,4-Dinitrotoluene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2,6-Dinitrotoluene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
1,2-Diphenylhydrazine	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Fluoranthene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Fluorene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Hexachlorobenzene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Hexachlorobutadiene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Hexachloroethane	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Isophorone	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2-Methylnaphthalene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
2-Methylphenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
3&4-Methylphenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Naphthalene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
2-Nitroaniline	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
3-Nitroaniline	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Nitroaniline	ND	ug/kg	1,100		1	1,100	08/29/17	08/29/17 22:44	1055
Nitrobenzene	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2-Nitrophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
4-Nitrophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Di-n-octyl phthalate	ND	ug/kg	1,100		1	1,100	08/29/17	08/29/17 22:44	1055
Pentachlorophenol	ND	ug/kg	1,100		1	1,100	08/29/17	08/29/17 22:44	1055
Phenanthrene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055
Phenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
Pyrene	ND	ug/kg	110		1	110	08/29/17	08/29/17 22:44	1055

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-004**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 15**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4,5-Trichlorophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,100		1	550	08/29/17	08/29/17 22:44	1055

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 1 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-005**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**32**	ug/kg	20		1	10	08/25/17	08/25/17 14:55	1011
Benzene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Bromochloromethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Bromodichloromethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Bromoform	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Bromomethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
2-Butanone (MEK)	ND	ug/kg	20		1	10	08/25/17	08/25/17 14:55	1011
Carbon Disulfide	ND	ug/kg	10		1	5.1	08/25/17	08/25/17 14:55	1011
Carbon tetrachloride	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Chlorobenzene	**48**	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Chloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Chloroform	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Chloromethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	41		1	20	08/25/17	08/25/17 14:55	1011
Dibromochloromethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2-Dibromoethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2-Dichlorobenzene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,3-Dichlorobenzene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,4-Dichlorobenzene	**3.5**	ug/kg	5.1	J	1	2.6	08/25/17	08/25/17 14:55	1011
1,1-Dichloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2-Dichloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,1-Dichloroethene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2-Dichloropropane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
cis-1,2-Dichloroethene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
cis-1,3-Dichloropropene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
trans-1,2-Dichloroethene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
trans-1,3-Dichloropropene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Ethylbenzene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
2-Hexanone (MBK)	ND	ug/kg	20		1	10	08/25/17	08/25/17 14:55	1011
Methylene chloride	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011

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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 1 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-005**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	20		1	10	08/25/17	08/25/17 14:55	1011
Styrene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Tetrachloroethene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Toluene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,1,1-Trichloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
1,1,2-Trichloroethane	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Trichloroethene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
Vinyl Chloride	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011
m&p-Xylene	ND	ug/kg	10		1	5.1	08/25/17	08/25/17 14:55	1011
o-Xylene	ND	ug/kg	5.1		1	2.6	08/25/17	08/25/17 14:55	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 2 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-006**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 78**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	120		1	61	08/28/17	08/28/17 15:24	1011
Benzene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Bromochloromethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Bromodichloromethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Bromoform	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Bromomethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
2-Butanone (MEK)	ND	ug/kg	120		1	61	08/28/17	08/28/17 15:24	1011
Carbon Disulfide	ND	ug/kg	61		1	31	08/28/17	08/28/17 15:24	1011
Carbon tetrachloride	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Chlorobenzene	**31**	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Chloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Chloroform	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Chloromethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	240		1	120	08/28/17	08/28/17 15:24	1011
Dibromochloromethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2-Dibromoethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2-Dichlorobenzene	**27**	ug/kg	31	J	1	15	08/28/17	08/28/17 15:24	1011
1,3-Dichlorobenzene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,4-Dichlorobenzene	**24**	ug/kg	31	J	1	15	08/28/17	08/28/17 15:24	1011
1,1-Dichloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2-Dichloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,1-Dichloroethene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
cis-1,2-Dichloroethene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2-Dichloropropane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
cis-1,3-Dichloropropene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
trans-1,2-Dichloroethene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
trans-1,3-Dichloropropene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Ethylbenzene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
2-Hexanone (MBK)	ND	ug/kg	120		1	61	08/28/17	08/28/17 15:24	1011
Methylene chloride	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 2 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-006**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 78**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	120		1	61	08/28/17	08/28/17 15:24	1011
Styrene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Tetrachloroethene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Toluene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,2,4-Trichlorobenzene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,1,1-Trichloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
1,1,2-Trichloroethane	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Trichloroethene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
Vinyl Chloride	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011
m&p-Xylene	ND	ug/kg	61		1	31	08/28/17	08/28/17 15:24	1011
o-Xylene	ND	ug/kg	31		1	15	08/28/17	08/28/17 15:24	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
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800-932-9047
FAX 410-788-8723

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 3 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-007**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 75**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	130		1	66	08/28/17	08/28/17 16:03	1011
Benzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Bromochloromethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Bromodichloromethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Bromoform	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Bromomethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
2-Butanone (MEK)	ND	ug/kg	130		1	66	08/28/17	08/28/17 16:03	1011
Carbon Disulfide	ND	ug/kg	66		1	33	08/28/17	08/28/17 16:03	1011
Carbon tetrachloride	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Chlorobenzene	**23**	ug/kg	33	J	1	17	08/28/17	08/28/17 16:03	1011
Chloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Chloroform	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Chloromethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	260		1	130	08/28/17	08/28/17 16:03	1011
Dibromochloromethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2-Dibromoethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2-Dichlorobenzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,3-Dichlorobenzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,4-Dichlorobenzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,1-Dichloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2-Dichloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,1-Dichloroethene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2-Dichloropropane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
cis-1,2-Dichloroethene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
cis-1,3-Dichloropropene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
trans-1,2-Dichloroethene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
trans-1,3-Dichloropropene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Ethylbenzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
2-Hexanone (MBK)	ND	ug/kg	130		1	66	08/28/17	08/28/17 16:03	1011
Methylene chloride	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-1 Grab 3 | **Date/Time Sampled: 08/23/2017 08:03** | **PSS Sample ID: 17082325-007**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 75**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	130		1	66	08/28/17	08/28/17 16:03	1011
Styrene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Tetrachloroethene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Toluene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,2,4-Trichlorobenzene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,1,1-Trichloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
1,1,2-Trichloroethane	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Trichloroethene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
Vinyl Chloride	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011
m&p-Xylene	ND	ug/kg	66		1	33	08/28/17	08/28/17 16:03	1011
o-Xylene	ND	ug/kg	33		1	17	08/28/17	08/28/17 16:03	1011

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BALTIMORE, MD 21228
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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-008**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 19**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**140**	ug/kg	140	J	1	68	08/25/17	08/25/17 16:55	1011
Benzene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Bromochloromethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Bromodichloromethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Bromoform	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Bromomethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
2-Butanone (MEK)	ND	ug/kg	140		1	68	08/25/17	08/25/17 16:55	1011
Carbon Disulfide	ND	ug/kg	68		1	34	08/25/17	08/25/17 16:55	1011
Carbon tetrachloride	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Chlorobenzene	**130**	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Chloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Chloroform	**31**	ug/kg	34	J	1	17	08/25/17	08/25/17 16:55	1011
Chloromethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	270		1	140	08/25/17	08/25/17 16:55	1011
Dibromochloromethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2-Dibromoethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2-Dichlorobenzene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,3-Dichlorobenzene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,4-Dichlorobenzene	**21**	ug/kg	34	J	1	17	08/25/17	08/25/17 16:55	1011
1,1-Dichloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2-Dichloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,1-Dichloroethene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
cis-1,2-Dichloroethene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2-Dichloropropane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
cis-1,3-Dichloropropene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
trans-1,2-Dichloroethene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
trans-1,3-Dichloropropene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Ethylbenzene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
2-Hexanone (MBK)	ND	ug/kg	140		1	68	08/25/17	08/25/17 16:55	1011
Methylene chloride	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011

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BALTIMORE, MD 21228
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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 1 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-008**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 19**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	140		1	68	08/25/17	08/25/17 16:55	1011
Styrene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Tetrachloroethene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Toluene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,2,4-Trichlorobenzene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,1,1-Trichloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
1,1,2-Trichloroethane	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Trichloroethene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
Vinyl Chloride	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011
m&p-Xylene	ND	ug/kg	68		1	34	08/25/17	08/25/17 16:55	1011
o-Xylene	ND	ug/kg	34		1	17	08/25/17	08/25/17 16:55	1011

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 2 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-009**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 8**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	1,200		1	610	08/28/17	08/28/17 16:44	1011
Benzene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Bromochloromethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Bromodichloromethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Bromoform	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Bromomethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
2-Butanone (MEK)	ND	ug/kg	1,200		1	610	08/28/17	08/28/17 16:44	1011
Carbon Disulfide	ND	ug/kg	610		1	310	08/28/17	08/28/17 16:44	1011
Carbon tetrachloride	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Chlorobenzene	**1,100**	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Chloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Chloroform	**180**	ug/kg	310	J	1	150	08/28/17	08/28/17 16:44	1011
Chloromethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	2,500		1	1,200	08/28/17	08/28/17 16:44	1011
Dibromochloromethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2-Dibromoethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2-Dichlorobenzene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,3-Dichlorobenzene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,4-Dichlorobenzene	**180**	ug/kg	310	J	1	150	08/28/17	08/28/17 16:44	1011
1,1-Dichloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2-Dichloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,1-Dichloroethene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
cis-1,2-Dichloroethene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2-Dichloropropane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
cis-1,3-Dichloropropene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
trans-1,2-Dichloroethene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
trans-1,3-Dichloropropene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Ethylbenzene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
2-Hexanone (MBK)	ND	ug/kg	1,200		1	610	08/28/17	08/28/17 16:44	1011
Methylene chloride	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 2 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-009**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 8**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	1,200		1	610	08/28/17	08/28/17 16:44	1011
Styrene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Tetrachloroethene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Toluene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,2,4-Trichlorobenzene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,1,1-Trichloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
1,1,2-Trichloroethane	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Trichloroethene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
Vinyl Chloride	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011
m&p-Xylene	ND	ug/kg	610		1	310	08/28/17	08/28/17 16:44	1011
o-Xylene	ND	ug/kg	310		1	150	08/28/17	08/28/17 16:44	1011

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CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 3 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-010**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 11**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	880		1	440	08/28/17	08/28/17 17:24	1011
Benzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Bromochloromethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Bromodichloromethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Bromoform	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Bromomethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
2-Butanone (MEK)	ND	ug/kg	880		1	440	08/28/17	08/28/17 17:24	1011
Carbon Disulfide	ND	ug/kg	440		1	220	08/28/17	08/28/17 17:24	1011
Carbon tetrachloride	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Chlorobenzene	**440**	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Chloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Chloroform	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Chloromethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	1,800		1	880	08/28/17	08/28/17 17:24	1011
Dibromochloromethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2-Dibromoethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2-Dichlorobenzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,3-Dichlorobenzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,4-Dichlorobenzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,1-Dichloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2-Dichloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,1-Dichloroethene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
cis-1,2-Dichloroethene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2-Dichloropropane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
cis-1,3-Dichloropropene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
trans-1,2-Dichloroethene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
trans-1,3-Dichloropropene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Ethylbenzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
2-Hexanone (MBK)	ND	ug/kg	880		1	440	08/28/17	08/28/17 17:24	1011
Methylene chloride	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: MP-1 Grab 3 | **Date/Time Sampled: 08/23/2017 08:34** | **PSS Sample ID: 17082325-010**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 11**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	880		1	440	08/28/17	08/28/17 17:24	1011
Styrene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Tetrachloroethene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Toluene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,2,4-Trichlorobenzene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,1,1-Trichloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
1,1,2-Trichloroethane	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Trichloroethene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
Vinyl Chloride	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011
m&p-Xylene	ND	ug/kg	440		1	220	08/28/17	08/28/17 17:24	1011
o-Xylene	ND	ug/kg	220		1	110	08/28/17	08/28/17 17:24	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 1 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-011**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**67**	ug/kg	110	J	1	57	08/28/17	08/28/17 18:03	1011
Benzene	**100**	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Bromochloromethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Bromodichloromethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Bromoform	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Bromomethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
2-Butanone (MEK)	ND	ug/kg	110		1	57	08/28/17	08/28/17 18:03	1011
Carbon Disulfide	ND	ug/kg	57		1	29	08/28/17	08/28/17 18:03	1011
Carbon tetrachloride	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Chlorobenzene	**350**	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Chloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Chloroform	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Chloromethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	230		1	110	08/28/17	08/28/17 18:03	1011
Dibromochloromethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2-Dibromoethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2-Dichlorobenzene	**130**	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,3-Dichlorobenzene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,4-Dichlorobenzene	**160**	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,1-Dichloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2-Dichloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,1-Dichloroethene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
cis-1,2-Dichloroethene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2-Dichloropropane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
cis-1,3-Dichloropropene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
trans-1,2-Dichloroethene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
trans-1,3-Dichloropropene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Ethylbenzene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
2-Hexanone (MBK)	ND	ug/kg	110		1	57	08/28/17	08/28/17 18:03	1011
Methylene chloride	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011

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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 1 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-011**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	110		1	57	08/28/17	08/28/17 18:03	1011
Styrene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Tetrachloroethene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Toluene	**950**	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,2,4-Trichlorobenzene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,1,1-Trichloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
1,1,2-Trichloroethane	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Trichloroethene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
Vinyl Chloride	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011
m&p-Xylene	ND	ug/kg	57		1	29	08/28/17	08/28/17 18:03	1011
o-Xylene	ND	ug/kg	29		1	14	08/28/17	08/28/17 18:03	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 2 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-012**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 72**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	120		1	58	08/28/17	08/28/17 18:43	1011
Benzene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Bromochloromethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Bromodichloromethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Bromoform	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Bromomethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
2-Butanone (MEK)	ND	ug/kg	120		1	58	08/28/17	08/28/17 18:43	1011
Carbon Disulfide	ND	ug/kg	58		1	29	08/28/17	08/28/17 18:43	1011
Carbon tetrachloride	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Chlorobenzene	**68**	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Chloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Chloroform	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Chloromethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	230		1	120	08/28/17	08/28/17 18:43	1011
Dibromochloromethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,2-Dibromoethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,2-Dichlorobenzene	**70**	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,3-Dichlorobenzene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,4-Dichlorobenzene	**85**	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,1-Dichloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,2-Dichloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,1-Dichloroethene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
cis-1,2-Dichloroethene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,2-Dichloropropane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
cis-1,3-Dichloropropene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
trans-1,2-Dichloroethene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
trans-1,3-Dichloropropene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Ethylbenzene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
2-Hexanone (MBK)	ND	ug/kg	120		1	58	08/28/17	08/28/17 18:43	1011
Methylene chloride	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 2 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-012**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 72**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	120		1	58	08/28/17	08/28/17 18:43	1011
Styrene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Tetrachloroethene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Toluene	**27**	ug/kg	29	J	1	15	08/28/17	08/28/17 18:43	1011
1,2,4-Trichlorobenzene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,1,1-Trichloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
1,1,2-Trichloroethane	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Trichloroethene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
Vinyl Chloride	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011
m&p-Xylene	ND	ug/kg	58		1	29	08/28/17	08/28/17 18:43	1011
o-Xylene	ND	ug/kg	29		1	15	08/28/17	08/28/17 18:43	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 3 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-013**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**33**	ug/kg	25		1	13	08/28/17	08/28/17 19:22	1011
Benzene	**150**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Bromochloromethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Bromodichloromethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Bromoform	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Bromomethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
2-Butanone (MEK)	ND	ug/kg	25		1	13	08/28/17	08/28/17 19:22	1011
Carbon Disulfide	ND	ug/kg	13		1	6.3	08/28/17	08/28/17 19:22	1011
Carbon tetrachloride	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Chlorobenzene	**150**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Chloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Chloroform	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Chloromethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	50		1	25	08/28/17	08/28/17 19:22	1011
Dibromochloromethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2-Dibromoethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2-Dichlorobenzene	**53**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,3-Dichlorobenzene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,4-Dichlorobenzene	**62**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,1-Dichloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2-Dichloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,1-Dichloroethene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
cis-1,2-Dichloroethene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2-Dichloropropane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
cis-1,3-Dichloropropene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
trans-1,2-Dichloroethene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
trans-1,3-Dichloropropene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Ethylbenzene	**8.1**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
2-Hexanone (MBK)	ND	ug/kg	25		1	13	08/28/17	08/28/17 19:22	1011
Methylene chloride	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011

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BALTIMORE, MD 21228
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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-2 Grab 3 | **Date/Time Sampled: 08/23/2017 09:00** | **PSS Sample ID: 17082325-013**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 76**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5030

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	25		1	13	08/28/17	08/28/17 19:22	1011
Styrene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Tetrachloroethene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Toluene	**530**	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,2,4-Trichlorobenzene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,1,1-Trichloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
1,1,2-Trichloroethane	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Trichloroethene	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
Vinyl Chloride	ND	ug/kg	6.3		1	3.1	08/28/17	08/28/17 19:22	1011
m&p-Xylene	**8.6**	ug/kg	13	J	1	6.3	08/28/17	08/28/17 19:22	1011
o-Xylene	**5.4**	ug/kg	6.3	J	1	3.1	08/28/17	08/28/17 19:22	1011

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 1 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-014**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 83**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**81**	ug/kg	21		1	10	08/26/17	08/26/17 19:22	1011
Benzene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Bromochloromethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Bromodichloromethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Bromoform	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Bromomethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
2-Butanone (MEK)	**20**	ug/kg	21	J	1	10	08/26/17	08/26/17 19:22	1011
Carbon Disulfide	ND	ug/kg	10		1	5.2	08/26/17	08/26/17 19:22	1011
Carbon tetrachloride	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Chlorobenzene	**300**	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Chloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Chloroform	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Chloromethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	42		1	21	08/26/17	08/26/17 19:22	1011
Dibromochloromethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2-Dibromoethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2-Dichlorobenzene	**13**	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,3-Dichlorobenzene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,4-Dichlorobenzene	**56**	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,1-Dichloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2-Dichloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,1-Dichloroethene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2-Dichloropropane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
cis-1,2-Dichloroethene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
cis-1,3-Dichloropropene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
trans-1,2-Dichloroethene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
trans-1,3-Dichloropropene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Ethylbenzene	**410**	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
2-Hexanone (MBK)	ND	ug/kg	21		1	10	08/26/17	08/26/17 19:22	1011
Methylene chloride	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011

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6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 1 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-014**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 83**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	21		1	10	08/26/17	08/26/17 19:22	1011
Styrene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Tetrachloroethene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Toluene	**78**	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,2,4-Trichlorobenzene	**4.7**	ug/kg	5.2	J	1	2.6	08/26/17	08/26/17 19:22	1011
1,1,1-Trichloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
1,1,2-Trichloroethane	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Trichloroethene	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
Vinyl Chloride	ND	ug/kg	5.2		1	2.6	08/26/17	08/26/17 19:22	1011
m&p-Xylene	**3,000**	ug/kg	560		50	280	08/26/17	08/29/17 11:21	1011
o-Xylene	**1,200**	ug/kg	280		50	140	08/26/17	08/29/17 11:21	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 2 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-015**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**48**	ug/kg	23		1	12	08/26/17	08/26/17 20:02	1011
Benzene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Bromochloromethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Bromodichloromethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Bromoform	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Bromomethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
2-Butanone (MEK)	ND	ug/kg	23		1	12	08/26/17	08/26/17 20:02	1011
Carbon Disulfide	ND	ug/kg	12		1	5.8	08/26/17	08/26/17 20:02	1011
Carbon tetrachloride	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Chlorobenzene	**24**	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Chloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Chloroform	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Chloromethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	47		1	23	08/26/17	08/26/17 20:02	1011
Dibromochloromethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2-Dibromoethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2-Dichlorobenzene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,3-Dichlorobenzene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,4-Dichlorobenzene	**3.4**	ug/kg	5.8	J	1	2.9	08/26/17	08/26/17 20:02	1011
1,1-Dichloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2-Dichloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,1-Dichloroethene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2-Dichloropropane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
cis-1,2-Dichloroethene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
cis-1,3-Dichloropropene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
trans-1,2-Dichloroethene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
trans-1,3-Dichloropropene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Ethylbenzene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
2-Hexanone (MBK)	ND	ug/kg	23		1	12	08/26/17	08/26/17 20:02	1011
Methylene chloride	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 2 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-015**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 70**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	23		1	12	08/26/17	08/26/17 20:02	1011
Styrene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Tetrachloroethene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Toluene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,1,1-Trichloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
1,1,2-Trichloroethane	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Trichloroethene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
Vinyl Chloride	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011
m&p-Xylene	ND	ug/kg	12		1	5.8	08/26/17	08/26/17 20:02	1011
o-Xylene	ND	ug/kg	5.8		1	2.9	08/26/17	08/26/17 20:02	1011

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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-016**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 65**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**35**	ug/kg	25		1	12	08/26/17	08/26/17 20:42	1011
Benzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Bromochloromethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Bromodichloromethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Bromoform	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Bromomethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
2-Butanone (MEK)	ND	ug/kg	25		1	12	08/26/17	08/26/17 20:42	1011
Carbon Disulfide	ND	ug/kg	12		1	6.2	08/26/17	08/26/17 20:42	1011
Carbon tetrachloride	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Chlorobenzene	**25**	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Chloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Chloroform	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Chloromethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2-Dibromo-3-chloropropane	ND	ug/kg	50		1	25	08/26/17	08/26/17 20:42	1011
Dibromochloromethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2-Dibromoethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2-Dichlorobenzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,3-Dichlorobenzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,4-Dichlorobenzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,1-Dichloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2-Dichloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,1-Dichloroethene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2-Dichloropropane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
cis-1,2-Dichloroethene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
cis-1,3-Dichloropropene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
trans-1,2-Dichloroethene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
trans-1,3-Dichloropropene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Ethylbenzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
2-Hexanone (MBK)	ND	ug/kg	25		1	12	08/26/17	08/26/17 20:42	1011
Methylene chloride	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011

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6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17082325

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Baltimore
Project Location: Baltimore, MD
Project ID: 0414901

Sample ID: SP-3 Grab 3 | **Date/Time Sampled: 08/23/2017 09:30** | **PSS Sample ID: 17082325-016**
Matrix: SOIL | **Date/Time Received: 08/23/2017 16:10** | **% Solids: 65**

VOCs (Project Specific List) | Analytical Method: SW-846 8260 B | Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	25		1	12	08/26/17	08/26/17 20:42	1011
Styrene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Tetrachloroethene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Toluene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,2,4-Trichlorobenzene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,1,1-Trichloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
1,1,2-Trichloroethane	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Trichloroethene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
Vinyl Chloride	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011
m&p-Xylene	ND	ug/kg	12		1	6.2	08/26/17	08/26/17 20:42	1011
o-Xylene	ND	ug/kg	6.2		1	3.1	08/26/17	08/26/17 20:42	1011

Case Narrative Summary

Client Name: ERM, Inc. - Annapolis

Project Name: FMC Baltimore

Work Order Number(s): 17082325
Project ID: 0414901

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

17082325: Analyses associated with analyst code 4001 were performed by ALS Group USA, Corp. - PA - PA 22-00293 VA 460157

General Comments:
VOC analysis performed using 5030 prep method taken from 2oz plastic containers.

Analytical:

VOCs (Project Specific List)

Batch: 145607
Surrogate exceedances identified; see surrogate summary form.

Batch: 145644
Surrogate exceedances identified; see surrogate summary form.

SVOC (Additional Compounds)

Batch: 145898
p-(Dimethylamino)azobenzen and pentachlorobenze reported on a dry weight basis. For sample 004, the surrogate 2-Fluorophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 18.6 and the control limits were 26 to 116. This result was reported at a dilution of 1. The surrogate 2-Fluorophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 19.2 and the control limits were 26 to 116. This result was reported at a dilution of 1.The surrogate 2-Fluorophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 18.9 and the control limits were 26 to 116. This result was reported at a dilution of 1.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): 17082325
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Baltimore
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SM2540G	SP-1	Initial	17082325-001	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-2	Initial	17082325-002	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-3	Initial	17082325-003	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	MP-1	Initial	17082325-004	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-1 Grab 1	Initial	17082325-005	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-1 Grab 2	Initial	17082325-006	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-1 Grab 3	Initial	17082325-007	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	MP-1 Grab 1	Initial	17082325-008	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	MP-1 Grab 2	Initial	17082325-009	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	MP-1 Grab 3	Initial	17082325-010	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-2 Grab 1	Initial	17082325-011	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-2 Grab 2	Initial	17082325-012	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-2 Grab 3	Initial	17082325-013	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-3 Grab 1	Initial	17082325-014	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-3 Grab 2	Initial	17082325-015	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
	SP-3 Grab 3	Initial	17082325-016	1062	S	145545	145545	08/23/2017	08/25/2017 07:42	08/25/2017 07:42
SW-846 6020 A	SP-1	Initial	17082325-001	1051	S	67510	145550	08/23/2017	08/24/2017 09:48	08/25/2017 01:49
	SP-2	Initial	17082325-002	1051	S	67510	145550	08/23/2017	08/24/2017 09:48	08/25/2017 01:56
	SP-3	Initial	17082325-003	1051	S	67510	145550	08/23/2017	08/24/2017 09:48	08/25/2017 02:28
	MP-1	Initial	17082325-004	1051	S	67510	145550	08/23/2017	08/24/2017 09:48	08/25/2017 02:35
	67510-1-BKS	BKS	67510-1-BKS	1051	S	67510	145550	--------	08/24/2017 09:48	08/24/2017 23:33
	67510-1-BLK	BLK	67510-1-BLK	1051	S	67510	145550	--------	08/24/2017 09:48	08/24/2017 23:26
	GTA-LG-1 S	MS	17081805-001 S	1051	S	67510	145550	08/15/2017	08/24/2017 09:48	08/24/2017 23:46
	GTA-LG-1 SD	MSD	17081805-001 SD	1051	S	67510	145550	08/15/2017	08/24/2017 09:48	08/24/2017 23:52
SW-846 8260 B	SP-1 Grab 1	Initial	17082325-005	1011	S	67552	145597	08/23/2017	08/25/2017 07:33	08/25/2017 14:55
	MP-1 Grab 1	Initial	17082325-008	1011	S	67552	145597	08/23/2017	08/25/2017 07:33	08/25/2017 16:55
	67552-1-BKS	BKS	67552-1-BKS	1011	S	67552	145597	--------	08/25/2017 07:33	08/25/2017 09:28
	67552-1-BLK	BLK	67552-1-BLK	1011	S	67552	145597	--------	08/25/2017 07:33	08/25/2017 10:07

Analytical Data Package Information Summary

Work Order(s): 17082325
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Baltimore
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	002 - S excavation 2' S	MS	17082403-002 S	1011	S	67552	145597	08/24/2017	08/25/2017 07:33	08/25/2017 11:27
	002 - S excavation 2' SD	MSD	17082403-002 SD	1011	S	67552	145597	08/24/2017	08/25/2017 07:33	08/25/2017 12:07
	SP-3 Grab 1	Initial	17082325-014	1011	S	67560	145607	08/23/2017	08/26/2017 09:43	08/26/2017 19:22
	SP-3 Grab 2	Initial	17082325-015	1011	S	67560	145607	08/23/2017	08/26/2017 09:43	08/26/2017 20:02
	SP-3 Grab 3	Initial	17082325-016	1011	S	67560	145607	08/23/2017	08/26/2017 09:43	08/26/2017 20:42
	67560-1-BKS	BKS	67560-1-BKS	1011	S	67560	145607	--------	08/26/2017 09:43	08/26/2017 11:27
	67560-1-BLK	BLK	67560-1-BLK	1011	S	67560	145607	--------	08/26/2017 09:43	08/26/2017 12:06
	S-1 S	MS	17082410-001 S	1011	S	67560	145607	08/23/2017	08/26/2017 09:43	08/26/2017 13:25
	S-1 SD	MSD	17082410-001 SD	1011	S	67560	145607	08/23/2017	08/26/2017 09:43	08/26/2017 14:05
	SP-1 Grab 2	Initial	17082325-006	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 15:24
	SP-1 Grab 3	Initial	17082325-007	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 16:03
	MP-1 Grab 2	Initial	17082325-009	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 16:44
	MP-1 Grab 3	Initial	17082325-010	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 17:24
	SP-2 Grab 1	Initial	17082325-011	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 18:03
	SP-2 Grab 2	Initial	17082325-012	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 18:43
	SP-2 Grab 3	Initial	17082325-013	1011	S	67576	145644	08/23/2017	08/28/2017 09:41	08/28/2017 19:22
	67576-1-BKS	BKS	67576-1-BKS	1011	S	67576	145644	--------	08/28/2017 09:41	08/28/2017 11:14
	67576-1-BLK	BLK	67576-1-BLK	1011	S	67576	145644	--------	08/28/2017 09:41	08/28/2017 11:54
	CVS-7 S	MS	17082411-001 S	1011	S	67576	145644	08/24/2017	08/28/2017 09:41	08/28/2017 14:04
	CVS-7 SD	MSD	17082411-001 SD	1011	S	67576	145644	08/24/2017	08/28/2017 09:41	08/28/2017 14:44
	67601-1-BKS	BKS	67601-1-BKS	1011	S	67601	145680	--------	08/29/2017 08:04	08/29/2017 10:02
	67601-1-BLK	BLK	67601-1-BLK	1011	S	67601	145680	--------	08/29/2017 08:04	08/29/2017 10:41
	#1 S	MS	17082901-001 S	1011	S	67601	145680	08/29/2017	08/29/2017 08:04	08/29/2017 14:14
	#1 SD	MSD	17082901-001 SD	1011	S	67601	145680	08/29/2017	08/29/2017 08:04	08/29/2017 14:54
	SP-3 Grab 1	Reanalysis	17082325-014	1011	S	67560	145680	08/23/2017	08/26/2017 09:43	08/29/2017 11:21
SW-846 8270 C	SP-1	Initial	17082325-001	4001	S	67575	145898	08/23/2017	09/01/2017 04:10	09/06/2017 22:50
	SP-2	Initial	17082325-002	4001	S	67575	145898	08/23/2017	09/01/2017 04:10	09/06/2017 23:17
	SP-3	Initial	17082325-003	4001	S	67575	145898	08/23/2017	09/01/2017 04:10	09/06/2017 23:43

Analytical Data Package Information Summary

Work Order(s): 17082325
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Baltimore
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8270 C	MP-1	Initial	17082325-004	4001	S	67575	145898	08/23/2017	09/01/2017 04:10	09/07/2017 00:10
SW-846 8270 C	SP-1	Initial	17082325-001	1055	S	67575	145710	08/23/2017	08/29/2017 09:00	08/29/2017 21:43
	SP-2	Initial	17082325-002	1055	S	67575	145710	08/23/2017	08/29/2017 09:00	08/29/2017 23:46
	SP-3	Initial	17082325-003	1055	S	67575	145710	08/23/2017	08/29/2017 09:00	08/29/2017 22:14
	MP-1	Initial	17082325-004	1055	S	67575	145710	08/23/2017	08/29/2017 09:00	08/29/2017 22:44
	67575-1-BKS	BKS	67575-1-BKS	1055	S	67575	145710	--------	08/29/2017 09:00	08/29/2017 20:42
	67575-1-BLK	BLK	67575-1-BLK	1055	S	67575	145710	--------	08/29/2017 09:00	08/29/2017 20:11
	67575-1-BSD	BSD	67575-1-BSD	1055	S	67575	145710	--------	08/29/2017 09:00	08/29/2017 21:13
	Quail Ridge - Topsoil S	MS	17082414-001 S	1055	S	67575	145710	08/24/2017	08/29/2017 09:00	08/30/2017 01:18
	Quail Ridge - Topsoil SD	MSD	17082414-001 SD	1055	S	67575	145710	08/24/2017	08/29/2017 09:00	08/30/2017 01:49

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Soil Date Prep: 08/29/2017
PSS Sample ID: 17082325-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	92		32-107	%	08/29/17 21:43
2-Fluorophenol	87		34-113	%	08/29/17 21:43
Nitrobenzene-d5	92		35-123	%	08/29/17 21:43
Phenol-d6	92		34-120	%	08/29/17 21:43
Terphenyl-D14	102		46-154	%	08/29/17 21:43
2,4,6-Tribromophenol	89		31-113	%	08/29/17 21:43

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145898 Matrix: Soil Date Prep: 09/01/2017
PSS Sample ID: 17082325-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl			62-100	%	09/06/17 22:50
2-Fluorophenol			48-94	%	09/06/17 22:50
Nitrobenzene-d5			57-114	%	09/06/17 22:50
Phenol-d6			49-103	%	09/06/17 22:50
Terphenyl-D14			39-143	%	09/06/17 22:50
2,4,6-Tribromophenol			65-102	%	09/06/17 22:50

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Soil Date Prep: 08/29/2017
PSS Sample ID: 17082325-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	94		32-107	%	08/29/17 23:46
2-Fluorophenol	89		34-113	%	08/29/17 23:46
Nitrobenzene-d5	92		35-123	%	08/29/17 23:46
Phenol-d6	93		34-120	%	08/29/17 23:46
Terphenyl-D14	108		46-154	%	08/29/17 23:46
2,4,6-Tribromophenol	89		31-113	%	08/29/17 23:46

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145898 Matrix: Soil Date Prep: 09/01/2017
PSS Sample ID: 17082325-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl			62-100	%	09/06/17 23:17
2-Fluorophenol			48-94	%	09/06/17 23:17
Nitrobenzene-d5			57-114	%	09/06/17 23:17
Phenol-d6			49-103	%	09/06/17 23:17
Terphenyl-D14			39-143	%	09/06/17 23:17
2,4,6-Tribromophenol			65-102	%	09/06/17 23:17

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Soil Date Prep: 08/29/2017
PSS Sample ID: 17082325-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	91		32-107	%	08/29/17 22:14
2-Fluorophenol	86		34-113	%	08/29/17 22:14
Nitrobenzene-d5	92		35-123	%	08/29/17 22:14
Phenol-d6	92		34-120	%	08/29/17 22:14
Terphenyl-D14	103		46-154	%	08/29/17 22:14
2,4,6-Tribromophenol	88		31-113	%	08/29/17 22:14

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145898 Matrix: Soil Date Prep: 09/01/2017
PSS Sample ID: 17082325-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl			62-100	%	09/06/17 23:43
2-Fluorophenol			48-94	%	09/06/17 23:43
Nitrobenzene-d5			57-114	%	09/06/17 23:43
Phenol-d6			49-103	%	09/06/17 23:43
Terphenyl-D14			39-143	%	09/06/17 23:43
2,4,6-Tribromophenol			65-102	%	09/06/17 23:43

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Soil Date Prep: 08/29/2017
PSS Sample ID: 17082325-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	85		32-107	%	08/29/17 22:44
2-Fluorophenol	81		34-113	%	08/29/17 22:44
Nitrobenzene-d5	85		35-123	%	08/29/17 22:44
Phenol-d6	85		34-120	%	08/29/17 22:44
Terphenyl-D14	93		46-154	%	08/29/17 22:44
2,4,6-Tribromophenol	77		31-113	%	08/29/17 22:44

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145898 Matrix: Soil Date Prep: 09/01/2017
PSS Sample ID: 17082325-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl			62-100	%	09/07/17 00:10
2-Fluorophenol			48-94	%	09/07/17 00:10
Nitrobenzene-d5			57-114	%	09/07/17 00:10
Phenol-d6			49-103	%	09/07/17 00:10
Terphenyl-D14			39-143	%	09/07/17 00:10
2,4,6-Tribromophenol			65-102	%	09/07/17 00:10

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QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 145597 Matrix: Soil Date Prep: 08/25/2017
PSS Sample ID: 17082325-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	123		82-126	%	08/25/17 14:55
Dibromofluoromethane	103		92-113	%	08/25/17 14:55
Toluene-D8	100		94-105	%	08/25/17 14:55

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	104		82-126	%	08/28/17 15:24
Dibromofluoromethane	106		92-113	%	08/28/17 15:24
Toluene-D8	98		94-105	%	08/28/17 15:24

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	120		82-126	%	08/28/17 16:03
Dibromofluoromethane	107		92-113	%	08/28/17 16:03
Toluene-D8	95		94-105	%	08/28/17 16:03

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 145597 Matrix: Soil Date Prep: 08/25/2017
PSS Sample ID: 17082325-008

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	108		82-126	%	08/25/17 16:55
Dibromofluoromethane	48	*	92-113	%	08/25/17 16:55
Toluene-D8	98		94-105	%	08/25/17 16:55

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-009

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	115		82-126	%	08/28/17 16:44
Dibromofluoromethane	104		92-113	%	08/28/17 16:44
Toluene-D8	98		94-105	%	08/28/17 16:44

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	122		82-126	%	08/28/17 17:24
Dibromofluoromethane	106		92-113	%	08/28/17 17:24
Toluene-D8	100		94-105	%	08/28/17 17:24

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	111		82-126	%	08/28/17 18:03
Dibromofluoromethane	111		92-113	%	08/28/17 18:03
Toluene-D8	87	*	94-105	%	08/28/17 18:03

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	106		82-126	%	08/28/17 18:43
Dibromofluoromethane	105		92-113	%	08/28/17 18:43
Toluene-D8	106	*	94-105	%	08/28/17 18:43

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Soil Date Prep: 08/28/2017
PSS Sample ID: 17082325-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	104		82-126	%	08/28/17 19:22
Dibromofluoromethane	105		92-113	%	08/28/17 19:22
Toluene-D8	106	*	94-105	%	08/28/17 19:22

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 145607 Matrix: Soil Date Prep: 08/26/2017
PSS Sample ID: 17082325-014

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	104		82-126	%	08/26/17 19:22
Dibromofluoromethane	107		92-113	%	08/26/17 19:22
Toluene-D8	101		94-105	%	08/26/17 19:22

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 145607 Matrix: Soil Date Prep: 08/26/2017
PSS Sample ID: 17082325-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	131	*	82-126	%	08/26/17 20:02
Dibromofluoromethane	109		92-113	%	08/26/17 20:02
Toluene-D8	99		94-105	%	08/26/17 20:02

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 145607 Matrix: Soil Date Prep: 08/26/2017
PSS Sample ID: 17082325-016

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	130	*	82-126	%	08/26/17 20:42
Dibromofluoromethane	114	*	92-113	%	08/26/17 20:42
Toluene-D8	92	*	94-105	%	08/26/17 20:42

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 6020 A Prep Method: SW3050B
Seq Number: 145550 Matrix: Solid Date Prep: 08/24/17
MB Sample Id: 67510-1-BLK LCS Sample Id: 67510-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<1.023	16.37	17.51	107	80-120	mg/kg	08/24/17 23:33	
Arsenic	<0.2047	16.37	17.11	105	80-120	mg/kg	08/24/17 23:33	
Beryllium	<1.023	16.37	14.90	91	80-120	mg/kg	08/24/17 23:33	
Cadmium	<1.023	16.37	15.57	95	80-120	mg/kg	08/24/17 23:33	
Chromium	<1.023	16.37	16.27	99	80-120	mg/kg	08/24/17 23:33	
Copper	<1.023	16.37	16.37	100	80-120	mg/kg	08/24/17 23:33	
Lead	<1.023	16.37	16.49	101	80-120	mg/kg	08/24/17 23:33	
Mercury	<0.04093	0.4093	0.3930	96	80-120	mg/kg	08/24/17 23:33	
Nickel	<1.023	16.37	15.98	98	80-120	mg/kg	08/24/17 23:33	
Selenium	<1.023	16.37	15.69	96	80-120	mg/kg	08/24/17 23:33	
Silver	<1.023	16.37	15.59	95	80-120	mg/kg	08/24/17 23:33	
Thallium	<0.8187	16.37	14.60	89	80-120	mg/kg	08/24/17 23:33	
Zinc	<4.093	81.87	77.08	94	80-120	mg/kg	08/24/17 23:33	

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Solid Date Prep: 08/29/17
MB Sample Id: 67575-1-BLK LCS Sample Id: 67575-1-BKS LCSD Sample Id: 67575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<16.64	1331	1112	84	1126	85	60-116	1	25	ug/kg	08/29/17 20:42	
Acenaphthylene	<16.64	1331	1122	84	1155	87	61-112	3	25	ug/kg	08/29/17 20:42	
Anthracene	<16.64	1331	1122	84	1239	94	66-115	10	25	ug/kg	08/29/17 20:42	
Benzidine	<83.19	1331	1001	75	1424	108	1-125	35	25	ug/kg	08/29/17 20:42	F
Benzo(a)anthracene	<16.64	1331	1188	89	1262	95	71-113	6	25	ug/kg	08/29/17 20:42	
Benzo(a)pyrene	<16.64	1331	1233	93	1260	95	69-118	2	25	ug/kg	08/29/17 20:42	
Benzo(b)fluoranthene	<16.64	1331	1299	98	1294	98	65-126	0	25	ug/kg	08/29/17 20:42	
Benzo(g,h,i)perylene	<16.64	1331	1108	83	1192	90	69-112	7	25	ug/kg	08/29/17 20:42	
Benzo(k)fluoranthene	<16.64	1331	1103	83	1210	91	57-129	9	25	ug/kg	08/29/17 20:42	
Butyl benzyl phthalate	<83.19	1331	1378	104	1463	111	81-111	6	25	ug/kg	08/29/17 20:42	
bis(2-chloroethoxy) methane	<83.19	1331	1144	86	1152	87	56-119	1	25	ug/kg	08/29/17 20:42	
bis(2-chloroethyl) ether	<83.19	1331	1151	86	1085	82	55-107	6	25	ug/kg	08/29/17 20:42	
bis(2-chloroisopropyl) ether	<83.19	1331	942.8	71	921.6	70	44-103	2	25	ug/kg	08/29/17 20:42	
bis(2-ethylhexyl) phthalate	<83.19	1331	1406	106	1431	108	84-109	2	25	ug/kg	08/29/17 20:42	
4-Bromophenylphenyl ether	<83.19	1331	1127	85	1201	91	63-125	6	25	ug/kg	08/29/17 20:42	
Di-n-butyl phthalate	<83.19	1331	1239	93	1332	101	76-110	7	25	ug/kg	08/29/17 20:42	
Carbazole	<83.19	1331	1338	101	1481	112	58-133	10	25	ug/kg	08/29/17 20:42	
4-Chloro-3-methylphenol	<83.19	1331	1215	91	1264	96	74-119	4	25	ug/kg	08/29/17 20:42	
4-Chloroaniline	<166.4	1331	1266	95	1415	107	45-107	11	25	ug/kg	08/29/17 20:42	
2-Chloronaphthalene	<83.19	1331	1121	84	1133	86	56-113	1	25	ug/kg	08/29/17 20:42	
2-Chlorophenol	<83.19	1331	1157	87	1143	86	59-113	1	25	ug/kg	08/29/17 20:42	
4-Chlorophenyl phenyl ether	<83.19	1331	1134	85	1141	86	62-111	1	25	ug/kg	08/29/17 20:42	
Chrysene	<16.64	1331	1200	90	1270	96	72-114	6	25	ug/kg	08/29/17 20:42	
Dibenz(a,h)anthracene	<16.64	1331	1191	89	1264	96	72-110	6	25	ug/kg	08/29/17 20:42	
Dibenzofuran	<83.19	1331	1159	87	1154	87	62-118	0	25	ug/kg	08/29/17 20:42	
3,3-Dichlorobenzidine	<83.19	1331	1868	140	2006	152	66-141	7	25	ug/kg	08/29/17 20:42	H
2,4-Dichlorophenol	<83.19	1331	1199	90	1247	94	68-118	4	25	ug/kg	08/29/17 20:42	
Diethyl phthalate	<83.19	1331	1337	100	1373	104	61-113	3	25	ug/kg	08/29/17 20:42	
Dimethyl phthalate	<83.19	1331	1367	103	1388	105	69-109	2	25	ug/kg	08/29/17 20:42	
2,4-Dimethylphenol	<83.19	1331	1168	88	1233	93	57-122	5	25	ug/kg	08/29/17 20:42	
4,6-Dinitro-2-methyl phenol	<83.19	1331	1372	103	1458	110	50-134	6	25	ug/kg	08/29/17 20:42	
2,4-Dinitrophenol	<166.4	1331	1160	87	1176	89	24-144	1	25	ug/kg	08/29/17 20:42	
2,4-Dinitrotoluene	<83.19	1331	1312	99	1333	101	61-124	2	25	ug/kg	08/29/17 20:42	
2,6-Dinitrotoluene	<83.19	1331	1272	96	1309	99	59-124	3	25	ug/kg	08/29/17 20:42	
1,2-Diphenylhydrazine	<83.19	1331	1382	104	1438	109	59-117	4	25	ug/kg	08/29/17 20:42	
Fluoranthene	<16.64	1331	1177	88	1224	93	69-119	4	25	ug/kg	08/29/17 20:42	
Fluorene	<16.64	1331	1119	84	1133	86	65-115	1	25	ug/kg	08/29/17 20:42	
Hexachlorobenzene	<83.19	1331	1172	88	1217	92	63-118	4	25	ug/kg	08/29/17 20:42	
Hexachlorobutadiene	<83.19	1331	1137	85	1186	90	55-120	4	25	ug/kg	08/29/17 20:42	
Hexachlorocyclopentadiene	<83.19	1331	1194	90	1233	93	29-138	3	25	ug/kg	08/29/17 20:42	
Hexachloroethane	<83.19	1331	1130	85	1123	85	54-110	1	25	ug/kg	08/29/17 20:42	
Indeno(1,2,3-c,d)pyrene	<16.64	1331	1217	91	1314	99	60-127	8	25	ug/kg	08/29/17 20:42	
Isophorone	<83.19	1331	1319	99	1380	104	57-116	5	25	ug/kg	08/29/17 20:42	
2-Methylnaphthalene	<16.64	1331	1064	80	1124	85	70-109	5	25	ug/kg	08/29/17 20:42	
2-Methylphenol	<83.19	1331	1247	94	1170	88	59-118	6	25	ug/kg	08/29/17 20:42	
3&4-Methylphenol	<83.19	1331	1213	91	1115	84	59-113	8	25	ug/kg	08/29/17 20:42	
Naphthalene	<16.64	1331	1100	83	1102	83	59-108	0	25	ug/kg	08/29/17 20:42	
2-Nitroaniline	<83.19	1331	1240	93	1255	95	51-116	1	25	ug/kg	08/29/17 20:42	
3-Nitroaniline	<83.19	1331	1373	103	1442	109	57-111	5	25	ug/kg	08/29/17 20:42	
4-Nitroaniline	<166.4	1331	1171	88	1349	102	55-125	14	25	ug/kg	08/29/17 20:42	
Nitrobenzene	<83.19	1331	1156	87	1159	88	53-110	0	25	ug/kg	08/29/17 20:42	

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 145710 Matrix: Solid Date Prep: 08/29/17
MB Sample Id: 67575-1-BLK LCS Sample Id: 67575-1-BKS LCSD Sample Id: 67575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
2-Nitrophenol	<83.19	1331	1241	93	1256	95	58-124	1	25	ug/kg	08/29/17 20:42	
4-Nitrophenol	<83.19	1331	1301	98	1305	99	51-116	0	25	ug/kg	08/29/17 20:42	
N-Nitrosodi-n-Propylamine	<83.19	1331	1247	94	1158	88	60-98	7	25	ug/kg	08/29/17 20:42	
N-Nitrosodiphenylamine	<83.19	1331	1159	87	1229	93	65-111	6	25	ug/kg	08/29/17 20:42	
Di-n-octyl phthalate	<166.4	1331	1407	106	1453	110	69-120	3	25	ug/kg	08/29/17 20:42	
Pentachlorophenol	<166.4	1331	735.4	55	940.1	71	56-124	24	25	ug/kg	08/29/17 20:42	L
Phenanthrene	<16.64	1331	1165	88	1143	86	67-117	2	25	ug/kg	08/29/17 20:42	
Phenol	<83.19	1331	1157	87	1124	85	58-114	3	25	ug/kg	08/29/17 20:42	
Pyrene	<16.64	1331	1194	90	1236	93	77-111	3	25	ug/kg	08/29/17 20:42	
2,4,5-Trichlorophenol	<83.19	1331	1167	88	1221	92	64-114	5	25	ug/kg	08/29/17 20:42	
2,4,6-Trichlorophenol	<83.19	1331	1215	91	1207	91	60-125	1	25	ug/kg	08/29/17 20:42	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	92		94		90		32-107	%	08/29/17 20:42
2-Fluorophenol	101		90		88		34-113	%	08/29/17 20:42
Nitrobenzene-d5	98		91		89		35-123	%	08/29/17 20:42
Phenol-d6	98		95		87		34-120	%	08/29/17 20:42
Terphenyl-D14	98		94		96		46-154	%	08/29/17 20:42
2,4,6-Tribromophenol	90		100		98		31-113	%	08/29/17 20:42

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145597 Matrix: Solid Date Prep: 08/25/17
MB Sample Id: 67552-1-BLK LCS Sample Id: 67552-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<9.881	59.29	64.39	109	46-127	ug/kg	08/25/17 09:28	
Benzene	<2.470	59.29	56.84	96	70-127	ug/kg	08/25/17 09:28	
Bromochloromethane	<2.470	59.29	55.03	93	68-122	ug/kg	08/25/17 09:28	
Bromodichloromethane	<2.470	59.29	54.93	93	68-122	ug/kg	08/25/17 09:28	
Bromoform	<2.470	59.29	54.47	92	57-127	ug/kg	08/25/17 09:28	
Bromomethane	<2.470	59.29	54.50	92	68-123	ug/kg	08/25/17 09:28	
2-Butanone (MEK)	<9.881	59.29	59.07	100	41-136	ug/kg	08/25/17 09:28	
Carbon Disulfide	<4.941	59.29	54.74	92	66-135	ug/kg	08/25/17 09:28	
Carbon tetrachloride	<2.470	59.29	55.01	93	64-147	ug/kg	08/25/17 09:28	
Chlorobenzene	<2.470	59.29	56.06	95	70-121	ug/kg	08/25/17 09:28	
Chloroethane	<2.470	59.29	57.08	96	66-142	ug/kg	08/25/17 09:28	
Chloroform	<2.470	59.29	55.10	93	68-123	ug/kg	08/25/17 09:28	
Chloromethane	<2.470	59.29	52.17	88	65-136	ug/kg	08/25/17 09:28	
1,2-Dibromo-3-chloropropane	<19.76	59.29	52.92	89	55-122	ug/kg	08/25/17 09:28	
Dibromochloromethane	<2.470	59.29	54.89	93	61-122	ug/kg	08/25/17 09:28	
1,2-Dibromoethane	<2.470	59.29	54.84	92	63-119	ug/kg	08/25/17 09:28	
1,2-Dichlorobenzene	<2.470	59.29	57.81	98	65-121	ug/kg	08/25/17 09:28	
1,3-Dichlorobenzene	<2.470	59.29	58.11	98	69-121	ug/kg	08/25/17 09:28	
1,4-Dichlorobenzene	<2.470	59.29	56.88	96	69-118	ug/kg	08/25/17 09:28	
1,1-Dichloroethane	<2.470	59.29	56.16	95	70-127	ug/kg	08/25/17 09:28	
1,2-Dichloroethane	<2.470	59.29	55.07	93	68-118	ug/kg	08/25/17 09:28	
1,1-Dichloroethene	<2.470	59.29	55.67	94	69-133	ug/kg	08/25/17 09:28	
1,2-Dichloropropane	<2.470	59.29	56.69	96	70-122	ug/kg	08/25/17 09:28	
cis-1,2-Dichloroethene	<2.470	59.29	57.27	97	68-126	ug/kg	08/25/17 09:28	
cis-1,3-Dichloropropene	<2.470	59.29	55.10	93	68-121	ug/kg	08/25/17 09:28	
trans-1,2-Dichloroethene	<2.470	59.29	55.81	94	70-132	ug/kg	08/25/17 09:28	
trans-1,3-Dichloropropene	<2.470	59.29	50.37	85	67-115	ug/kg	08/25/17 09:28	
Ethylbenzene	<2.470	59.29	55.96	94	70-125	ug/kg	08/25/17 09:28	
2-Hexanone (MBK)	<9.881	59.29	52.74	89	40-121	ug/kg	08/25/17 09:28	
Methylene chloride	<2.470	59.29	54.57	92	67-121	ug/kg	08/25/17 09:28	
4-Methyl-2-Pentanone (MIBK)	<9.881	59.29	56.34	95	48-117	ug/kg	08/25/17 09:28	
Styrene	<2.470	59.29	55.98	94	71-120	ug/kg	08/25/17 09:28	
1,1,2,2-Tetrachloroethane	<2.470	59.29	54.69	92	59-122	ug/kg	08/25/17 09:28	
Tetrachloroethene	<2.470	59.29	56.41	95	65-145	ug/kg	08/25/17 09:28	
Toluene	<2.470	59.29	56.71	96	69-129	ug/kg	08/25/17 09:28	
1,2,4-Trichlorobenzene	<2.470	59.29	48.92	83	64-115	ug/kg	08/25/17 09:28	
1,1,1-Trichloroethane	<2.470	59.29	54.13	91	65-139	ug/kg	08/25/17 09:28	
1,1,2-Trichloroethane	<2.470	59.29	55.22	93	64-125	ug/kg	08/25/17 09:28	
Trichloroethene	<2.470	59.29	54.50	92	69-133	ug/kg	08/25/17 09:28	
Vinyl Chloride	<2.470	59.29	59.27	100	69-142	ug/kg	08/25/17 09:28	
m&p-Xylene	<4.941	118.6	113.9	96	71-124	ug/kg	08/25/17 09:28	
o-Xylene	<2.470	59.29	56.62	95	72-123	ug/kg	08/25/17 09:28	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	131	*	95		82-126	%	08/25/17 09:28
Dibromofluoromethane	105		103		92-113	%	08/25/17 09:28
Toluene-D8	96		100		94-105	%	08/25/17 09:28

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145607 Matrix: Solid Date Prep: 08/26/17
MB Sample Id: 67560-1-BLK LCS Sample Id: 67560-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<9.785	58.71	58.15	99	46-127	ug/kg	08/26/17 11:27	
Benzene	<2.446	58.71	65.64	112	70-127	ug/kg	08/26/17 11:27	
Bromochloromethane	<2.446	58.71	66.02	112	68-122	ug/kg	08/26/17 11:27	
Bromodichloromethane	<2.446	58.71	63.27	108	68-122	ug/kg	08/26/17 11:27	
Bromoform	<2.446	58.71	63.46	108	57-127	ug/kg	08/26/17 11:27	
Bromomethane	<2.446	58.71	62.78	107	68-123	ug/kg	08/26/17 11:27	
2-Butanone (MEK)	<9.785	58.71	50.92	87	41-136	ug/kg	08/26/17 11:27	
Carbon Disulfide	<4.892	58.71	63.60	108	66-135	ug/kg	08/26/17 11:27	
Carbon tetrachloride	<2.446	58.71	63.76	109	64-147	ug/kg	08/26/17 11:27	
Chlorobenzene	<2.446	58.71	64.25	109	70-121	ug/kg	08/26/17 11:27	
Chloroethane	<2.446	58.71	64.51	110	66-142	ug/kg	08/26/17 11:27	
Chloroform	<2.446	58.71	63.11	107	68-123	ug/kg	08/26/17 11:27	
Chloromethane	<2.446	58.71	57.22	97	65-136	ug/kg	08/26/17 11:27	
1,2-Dibromo-3-chloropropane	<19.57	58.71	59.34	101	55-122	ug/kg	08/26/17 11:27	
Dibromochloromethane	<2.446	58.71	63.03	107	61-122	ug/kg	08/26/17 11:27	
1,2-Dibromoethane	<2.446	58.71	63.69	108	63-119	ug/kg	08/26/17 11:27	
1,2-Dichlorobenzene	<2.446	58.71	64.85	110	65-121	ug/kg	08/26/17 11:27	
1,3-Dichlorobenzene	<2.446	58.71	64.81	110	69-121	ug/kg	08/26/17 11:27	
1,4-Dichlorobenzene	<2.446	58.71	63.78	109	69-118	ug/kg	08/26/17 11:27	
1,1-Dichloroethane	<2.446	58.71	64.65	110	70-127	ug/kg	08/26/17 11:27	
1,2-Dichloroethane	<2.446	58.71	63.87	109	68-118	ug/kg	08/26/17 11:27	
1,1-Dichloroethene	<2.446	58.71	64.16	109	69-133	ug/kg	08/26/17 11:27	
1,2-Dichloropropane	<2.446	58.71	65.97	112	70-122	ug/kg	08/26/17 11:27	
cis-1,2-Dichloroethene	<2.446	58.71	66.36	113	68-126	ug/kg	08/26/17 11:27	
cis-1,3-Dichloropropene	<2.446	58.71	63.76	109	68-121	ug/kg	08/26/17 11:27	
trans-1,2-Dichloroethene	<2.446	58.71	65.62	112	70-132	ug/kg	08/26/17 11:27	
trans-1,3-Dichloropropene	<2.446	58.71	58.42	100	67-115	ug/kg	08/26/17 11:27	
Ethylbenzene	<2.446	58.71	64.58	110	70-125	ug/kg	08/26/17 11:27	
2-Hexanone (MBK)	<9.785	58.71	45.53	78	40-121	ug/kg	08/26/17 11:27	
Methylene chloride	<2.446	58.71	63.14	108	67-121	ug/kg	08/26/17 11:27	
4-Methyl-2-Pentanone (MIBK)	<9.785	58.71	49.51	84	48-117	ug/kg	08/26/17 11:27	
Styrene	<2.446	58.71	64.82	110	71-120	ug/kg	08/26/17 11:27	
1,1,2,2-Tetrachloroethane	<2.446	58.71	61.79	105	59-122	ug/kg	08/26/17 11:27	
Tetrachloroethene	<2.446	58.71	64.13	109	65-145	ug/kg	08/26/17 11:27	
Toluene	<2.446	58.71	65.65	112	69-129	ug/kg	08/26/17 11:27	
1,2,4-Trichlorobenzene	<2.446	58.71	55.53	95	64-115	ug/kg	08/26/17 11:27	
1,1,1-Trichloroethane	<2.446	58.71	63.59	108	65-139	ug/kg	08/26/17 11:27	
1,1,2-Trichloroethane	<2.446	58.71	64.64	110	64-125	ug/kg	08/26/17 11:27	
Trichloroethene	<2.446	58.71	64.14	109	69-133	ug/kg	08/26/17 11:27	
Vinyl Chloride	<2.446	58.71	67.68	115	69-142	ug/kg	08/26/17 11:27	
m&p-Xylene	<4.892	117.4	130.3	111	71-124	ug/kg	08/26/17 11:27	
o-Xylene	<2.446	58.71	65.33	111	72-123	ug/kg	08/26/17 11:27	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	133	*	92		82-126	%	08/26/17 11:27
Dibromofluoromethane	105		106		92-113	%	08/26/17 11:27
Toluene-D8	96		99		94-105	%	08/26/17 11:27

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 145644 Matrix: Solid Date Prep: 08/28/17
MB Sample Id: 67576-1-BLK LCS Sample Id: 67576-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<9.843	59.06	69.80	118	46-127	ug/kg	08/28/17 11:14	
Benzene	<2.461	59.06	68.00	115	70-127	ug/kg	08/28/17 11:14	
Bromochloromethane	<2.461	59.06	62.82	106	68-122	ug/kg	08/28/17 11:14	
Bromodichloromethane	<2.461	59.06	62.71	106	68-122	ug/kg	08/28/17 11:14	
Bromoform	<2.461	59.06	62.42	106	57-127	ug/kg	08/28/17 11:14	
Bromomethane	<2.461	59.06	68.47	116	68-123	ug/kg	08/28/17 11:14	
2-Butanone (MEK)	<9.843	59.06	58.39	99	41-136	ug/kg	08/28/17 11:14	
Carbon Disulfide	<4.921	59.06	66.64	113	66-135	ug/kg	08/28/17 11:14	
Carbon tetrachloride	<2.461	59.06	71.62	121	64-147	ug/kg	08/28/17 11:14	
Chlorobenzene	<2.461	59.06	67.84	115	70-121	ug/kg	08/28/17 11:14	
Chloroethane	<2.461	59.06	66.39	112	66-142	ug/kg	08/28/17 11:14	
Chloroform	<2.461	59.06	63.72	108	68-123	ug/kg	08/28/17 11:14	
Chloromethane	<2.461	59.06	63.46	107	65-136	ug/kg	08/28/17 11:14	
1,2-Dibromo-3-chloropropane	<19.69	59.06	64.35	109	55-122	ug/kg	08/28/17 11:14	
Dibromochloromethane	<2.461	59.06	63.47	107	61-122	ug/kg	08/28/17 11:14	
1,2-Dibromoethane	<2.461	59.06	65.51	111	63-119	ug/kg	08/28/17 11:14	
1,2-Dichlorobenzene	<2.461	59.06	64.13	109	65-121	ug/kg	08/28/17 11:14	
1,3-Dichlorobenzene	<2.461	59.06	66.40	112	69-121	ug/kg	08/28/17 11:14	
1,4-Dichlorobenzene	<2.461	59.06	63.73	108	69-118	ug/kg	08/28/17 11:14	
1,1-Dichloroethane	<2.461	59.06	66.57	113	70-127	ug/kg	08/28/17 11:14	
1,2-Dichloroethane	<2.461	59.06	60.84	103	68-118	ug/kg	08/28/17 11:14	
1,1-Dichloroethene	<2.461	59.06	70.50	119	69-133	ug/kg	08/28/17 11:14	
1,2-Dichloropropane	<2.461	59.06	65.63	111	70-122	ug/kg	08/28/17 11:14	
cis-1,2-Dichloroethene	<2.461	59.06	66.40	112	68-126	ug/kg	08/28/17 11:14	
cis-1,3-Dichloropropene	<2.461	59.06	62.47	106	68-121	ug/kg	08/28/17 11:14	
trans-1,2-Dichloroethene	<2.461	59.06	68.46	116	70-132	ug/kg	08/28/17 11:14	
trans-1,3-Dichloropropene	<2.461	59.06	55.25	94	67-115	ug/kg	08/28/17 11:14	
Ethylbenzene	<2.461	59.06	70.84	120	70-125	ug/kg	08/28/17 11:14	
2-Hexanone (MBK)	<9.843	59.06	50.29	85	40-121	ug/kg	08/28/17 11:14	
Methylene chloride	<2.461	59.06	60.30	102	67-121	ug/kg	08/28/17 11:14	
4-Methyl-2-Pentanone (MIBK)	<9.843	59.06	57.65	98	48-117	ug/kg	08/28/17 11:14	
Styrene	<2.461	59.06	65.92	112	71-120	ug/kg	08/28/17 11:14	
1,1,2,2-Tetrachloroethane	<2.461	59.06	65.77	111	59-122	ug/kg	08/28/17 11:14	
Tetrachloroethene	<2.461	59.06	70.55	119	65-145	ug/kg	08/28/17 11:14	
Toluene	<2.461	59.06	69.28	117	69-129	ug/kg	08/28/17 11:14	
1,2,4-Trichlorobenzene	<2.461	59.06	46.93	79	64-115	ug/kg	08/28/17 11:14	
1,1,1-Trichloroethane	<2.461	59.06	69.16	117	65-139	ug/kg	08/28/17 11:14	
1,1,2-Trichloroethane	<2.461	59.06	63.33	107	64-125	ug/kg	08/28/17 11:14	
Trichloroethene	<2.461	59.06	68.45	116	69-133	ug/kg	08/28/17 11:14	
Vinyl Chloride	<2.461	59.06	76.26	129	69-142	ug/kg	08/28/17 11:14	
m&p-Xylene	<4.921	118.1	143.3	121	71-124	ug/kg	08/28/17 11:14	
o-Xylene	<2.461	59.06	70.49	119	72-123	ug/kg	08/28/17 11:14	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	139	*	96		82-126	%	08/28/17 11:14
Dibromofluoromethane	105		108		92-113	%	08/28/17 11:14
Toluene-D8	103		97		94-105	%	08/28/17 11:14

PHASE SEPARATION SCIENCE, INC.

QC Summary 17082325

ERM, Inc. - Annapolis
FMC Baltimore

Analytical Method: SW-846 8260 B Prep Method: SW5030

Seq Number: 145680 Matrix: Solid Date Prep: 08/29/17

MB Sample Id: 67601-1-BLK LCS Sample Id: 67601-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
m&p-Xylene	<5.010	120.2	115	96	71-124	ug/kg	08/29/17 10:02	
o-Xylene	<2.505	60.12	57.64	96	72-123	ug/kg	08/29/17 10:02	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	127	*	95		82-126	%	08/29/17 10:02
Dibromofluoromethane	107		107		92-113	%	08/29/17 10:02
Toluene-D8	97		104		94-105	%	08/29/17 10:02

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1)

*CLIENT: ERM *OFFICE LOC. Annapolis

*PROJECT MGR: Lindsey France *PHONE NO.: (410) 266-0006

EMAIL: lindsey.france@erm.com FAX NO.: (410) 266-8912

*PROJECT NAME: FMC Baltimore PROJECT NO.: 0414701

SITE LOCATION: Baltimore MD P.O. NO.:

SAMPLER(S): S. Georgius DW CERT NO.:

PSS Work Order #: 17082325 PAGE 1 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	VOCs	SVOCs	Total Metals	VOCs								REMARKS
Preservatives Used							+	—	—									
Analysis/ Method Required (3) *																		
1	SP-1	8/23/17	0803	S	~~5~~ 2	C	3	1	1									
2	SP-2	8/23/17	0906	S	~~5~~ 2	C	3	1	1									
3	SP-3	8/23/17	0930	S	~~5~~ 2	C	3	1	1									
4	MP-1	8/23/17	0834	S	~~5~~ 2	C	9	1	1									very liquid, extra bottles for VOCs
5	SP-1-Grab1	↓	0803	S	1	G				1								
6	SP-1-Grab2		0803	S	1	G				1								
7	SP-1-Grab3		0803	S	1	G				1								
8	MP-1-Grab1		0834	S	2	G				2								very liquid used extra 4 oz bottles
9	MP-1-Grab2		0834	S	2	G				2								
10	MP-1-Grab3	↓	0834	S	2	G				2								

(5)

Relinquished By:	Date	Time	Received By:
(1)	8/23/17	1:45	
(2)	8/23	1610	
(3)			
(4)			

(4)

*Requested TAT (One TAT per COC): ☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required: COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER _____

Special Instructions: 2 day HT for VOCs

DW COMPLIANCE? YES ☐ EDD FORMAT TYPE _____ STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER _____

# of Coolers: 2

Custody Seal: ABS

Ice Present: PRES Temp: 4° All -18°C

Shipping Carrier: TDE

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1)

*CLIENT: ERM *OFFICE LOC. Annapolis

*PROJECT MGR: Lindsey France *PHONE NO.: (410) 266-0006

EMAIL: lindsey.france@erm.com FAX NO.: (410) 266-8912

*PROJECT NAME: FMC Baltimore PROJECT NO.: 0414901

SITE LOCATION: Baltimore MD P.O. NO.:

SAMPLER(S): S. Georgiou DW CERT NO.:

PSS Work Order #: 17082325 PAGE 2 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis/ Method Required (3) * VOCs	REMARKS
11	SP-2-Grab1	8/23/17	0900	S	1	G		1	
12	SP-2-Grab2	↓	↓	↓	1	↓		1	
13	SP-2-Grab3	↓	↓	↓	1	↓		1	
14	SP-3-Grab1	↓	0930	↓	1	↓		1	
15	SP-3-Grab2	↓	↓	↓	1	↓		1	
16	SP-3-Grab3	↓	↓	↓	1	↓		1	

(5)

Relinquished By: (1)	Date	Time	Received By:
[signature]	8/23/17	1:45	[signature]
Relinquished By: (2)	Date	Time	Received By:
[signature]	8/23	1610	[signature]
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required:
COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER _____

Special Instructions:

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE _____

STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER _____

# of Coolers: 2

Custody Seal: ABS

Ice Present: PRES Temp: 4°-18°C

Shipping Carrier: TTE

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The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	17082325	**Received By**	Thomas Wingate
Client Name	ERM, Inc. - Annapolis	**Date Received**	08/23/2017 04:10:00 PM
Project Name	FMC Baltimore	**Delivered By**	Trans Time Express
Project Number	0414901	**Tracking No**	Not Applicable
Disposal Date	09/27/2017	**Logged In By**	Thomas Wingate

Shipping Container(s)

No. of Coolers 2

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	18
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	S. Georgius
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 16 Total No. of Containers Received 62

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 08/23/2017

Thomas Wingate

PM Review and Approval: Amber Confer Date: 08/29/2017

Amber Confer

Analytical Report for

ERM, Inc. - Annapolis

Certificate of Analysis No.: 17091507

Project Manager: Lindsey France
Project Name : FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID : 414901

October 10, 2017

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

October 10, 2017

Lindsey France
ERM, Inc. - Annapolis
180 Admiral Cochrane Drive Suite 400
Annapolis, MD 21401

Reference: PSS Work Order(s) No: **17091507**
Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID.: 414901

Dear Lindsey France :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **17091507**. This report has been revised to report N-Nitrosodiphenylamine. This report version includes revised sample results. This report cancels and supersedes report version 1.001 dated October 3, 2017.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 20, 2017, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: ERM, Inc. - Annapolis
Project Name: FMC Mud Tubs

Work Order Number(s): 17091507

Project ID: 414901

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/15/2017 at 12:10 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
17091507-001	MP-2	SOIL	09/14/17 14:20
17091507-002	MP-2 (VOC 1)	SOIL	09/14/17 14:04
17091507-003	MP-2 (VOC 2)	SOIL	09/14/17 14:03
17091507-004	MP-2 (VOC 3)	SOIL	09/14/17 14:05

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 | **Date/Time Sampled: 09/14/2017 14:20** | **PSS Sample ID: 17091507-001**
Matrix: SOIL | **Date/Time Received: 09/15/2017 12:10** | **% Solids: 73**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Arsenic	**2.1**	mg/kg	0.63		1	0.31	09/19/17	09/19/17 20:53	1051
Beryllium	ND	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Cadmium	ND	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Chromium	**20**	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Copper	**29**	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Lead	**20**	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Mercury	ND	mg/kg	0.13		1	0.063	09/19/17	09/19/17 20:53	1051
Nickel	**7.1**	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Selenium	ND	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Silver	ND	mg/kg	3.1		1	1.6	09/19/17	09/19/17 20:53	1051
Sodium	**210**	mg/kg	63		1	31	09/19/17	09/20/17 22:40	1051
Thallium	ND	mg/kg	2.5		1	1.3	09/19/17	09/19/17 20:53	1051
Vanadium	**23**	mg/kg	3.1		1	1.6	09/19/17	09/20/17 22:40	1051
Zinc	**18**	mg/kg	13		1	6.3	09/19/17	09/19/17 20:53	1051

SVOC (Additional Compounds) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	MDL	Prepared	Analyzed	Analyst
p-(Dimethylamino)azobenzene	ND	ug/kg	627		132	09/28/17	09/28/17 21:26	4001
Pentachlorobenzene	ND	ug/kg	209		23	09/28/17	09/28/17 21:26	4001

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 | **Date/Time Sampled: 09/14/2017 14:20** | **PSS Sample ID: 17091507-001**
Matrix: SOIL | **Date/Time Received: 09/15/2017 12:10** | **% Solids: 73**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	**28**	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Acenaphthylene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Anthracene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Benzidine	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Benzo(a)anthracene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Benzo(a)pyrene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Benzo(b)fluoranthene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Benzo(g,h,i)perylene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Benzo(k)fluoranthene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Butyl benzyl phthalate	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
bis(2-chloroethoxy) methane	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
bis(2-chloroethyl) ether	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Bromophenylphenyl ether	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Di-n-butyl phthalate	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Carbazole	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Chloro-3-methylphenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Chloroaniline	ND	ug/kg	230		1	230	09/19/17	09/21/17 18:08	1055
2-Chloronaphthalene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2-Chlorophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Chrysene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Dibenz(a,h)anthracene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Dibenzofuran	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
3,3-Dichlorobenzidine	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2,4-Dichlorophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Diethyl phthalate	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Dimethyl phthalate	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2,4-Dimethylphenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055

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ROUTE 40 WEST
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410-747-8770
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FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 | **Date/Time Sampled: 09/14/2017 14:20** | **PSS Sample ID: 17091507-001**
Matrix: SOIL | **Date/Time Received: 09/15/2017 12:10** | **% Solids: 73**

SVOCs (Project Specific List) | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2,4-Dinitrophenol	ND	ug/kg	460		1	230	09/19/17	09/21/17 18:08	1055
2,4-Dinitrotoluene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2,6-Dinitrotoluene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
1,2-Diphenylhydrazine	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Fluoranthene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Fluorene	**44**	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Hexachlorobenzene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Hexachlorobutadiene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Hexachlorocyclopentadiene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Hexachloroethane	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Isophorone	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2-Methylnaphthalene	**81**	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
2-Methylphenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
3&4-Methylphenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Naphthalene	**29**	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
2-Nitroaniline	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
3-Nitroaniline	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Nitroaniline	ND	ug/kg	230		1	230	09/19/17	09/21/17 18:08	1055
Nitrobenzene	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2-Nitrophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
4-Nitrophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
N-Nitrosodiphenylamine	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Di-n-octyl phthalate	ND	ug/kg	230		1	230	09/19/17	09/21/17 18:08	1055
Pentachlorophenol	ND	ug/kg	230		1	230	09/19/17	09/21/17 18:08	1055
Phenanthrene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055
Phenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
Pyrene	ND	ug/kg	23		1	23	09/19/17	09/21/17 18:08	1055

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 | **Date/Time Sampled: 09/14/2017 14:20** | **PSS Sample ID: 17091507-001**
Matrix: SOIL | **Date/Time Received: 09/15/2017 12:10** | **% Solids: 73**

SVOCs (Project Specific List) — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4,5-Trichlorophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055
2,4,6-Trichlorophenol	ND	ug/kg	230		1	110	09/19/17	09/21/17 18:08	1055

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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 1) **Date/Time Sampled: 09/14/2017 14:04** **PSS Sample ID: 17091507-002**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 71**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**99**	ug/kg	28		1	14	09/18/17	09/18/17 21:10	1035
Benzene	**94**	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Bromochloromethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Bromodichloromethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Bromoform	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Bromomethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
2-Butanone (MEK)	ND	ug/kg	28		1	14	09/18/17	09/18/17 21:10	1035
Carbon Disulfide	ND	ug/kg	14		1	6.9	09/18/17	09/18/17 21:10	1035
Carbon tetrachloride	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Chlorobenzene	**23**	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Chloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Chloroform	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Chloromethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2-Dibromo-3-chloropropane	ND	ug/kg	55		1	28	09/18/17	09/18/17 21:10	1035
Dibromochloromethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2-Dibromoethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2-Dichlorobenzene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,3-Dichlorobenzene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,4-Dichlorobenzene	**4.3**	ug/kg	6.9	J	1	3.4	09/18/17	09/18/17 21:10	1035
1,1-Dichloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2-Dichloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,1-Dichloroethene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2-Dichloropropane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
cis-1,2-Dichloroethene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
cis-1,3-Dichloropropene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
trans-1,2-Dichloroethene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
trans-1,3-Dichloropropene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Ethylbenzene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
2-Hexanone (MBK)	ND	ug/kg	28		1	14	09/18/17	09/18/17 21:10	1035
Methylene chloride	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 1) **Date/Time Sampled: 09/14/2017 14:04** **PSS Sample ID: 17091507-002**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 71**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	28		1	14	09/18/17	09/18/17 21:10	1035
Styrene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Tetrachloroethene	**3.6**	ug/kg	6.9	J	1	3.4	09/18/17	09/18/17 21:10	1035
Toluene	**91**	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,2,4-Trichlorobenzene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,1,1-Trichloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
1,1,2-Trichloroethane	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Trichloroethene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
Vinyl Chloride	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035
m&p-Xylene	ND	ug/kg	14		1	6.9	09/18/17	09/18/17 21:10	1035
o-Xylene	ND	ug/kg	6.9		1	3.4	09/18/17	09/18/17 21:10	1035

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CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 2) **Date/Time Sampled: 09/14/2017 14:03** **PSS Sample ID: 17091507-003**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 60**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**140**	ug/kg	39		1	19	09/15/17	09/15/17 21:33	1035
Benzene	**93**	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Bromochloromethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Bromodichloromethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Bromoform	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Bromomethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
2-Butanone (MEK)	ND	ug/kg	39		1	19	09/15/17	09/15/17 21:33	1035
Carbon Disulfide	**9.9**	ug/kg	19	J	1	9.7	09/15/17	09/15/17 21:33	1035
Carbon tetrachloride	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Chlorobenzene	**40**	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Chloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Chloroform	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Chloromethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2-Dibromo-3-chloropropane	ND	ug/kg	78		1	39	09/15/17	09/15/17 21:33	1035
Dibromochloromethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2-Dibromoethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2-Dichlorobenzene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,3-Dichlorobenzene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,4-Dichlorobenzene	**7.9**	ug/kg	9.7	J	1	4.9	09/15/17	09/15/17 21:33	1035
1,1-Dichloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2-Dichloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,1-Dichloroethene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2-Dichloropropane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
cis-1,2-Dichloroethene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
cis-1,3-Dichloropropene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
trans-1,2-Dichloroethene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
trans-1,3-Dichloropropene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Ethylbenzene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
2-Hexanone (MBK)	ND	ug/kg	39		1	19	09/15/17	09/15/17 21:33	1035
Methylene chloride	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035

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BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 2) **Date/Time Sampled: 09/14/2017 14:03** **PSS Sample ID: 17091507-003**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 60**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	39		1	19	09/15/17	09/15/17 21:33	1035
Styrene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,1,2,2-Tetrachloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Tetrachloroethene	**6.8**	ug/kg	9.7	J	1	4.9	09/15/17	09/15/17 21:33	1035
Toluene	**120**	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,2,4-Trichlorobenzene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,1,1-Trichloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
1,1,2-Trichloroethane	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Trichloroethene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
Vinyl Chloride	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035
m&p-Xylene	**11**	ug/kg	19	J	1	9.7	09/15/17	09/15/17 21:33	1035
o-Xylene	ND	ug/kg	9.7		1	4.9	09/15/17	09/15/17 21:33	1035

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800-932-9047
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CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 3) **Date/Time Sampled: 09/14/2017 14:05** **PSS Sample ID: 17091507-004**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 38**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**120**	ug/kg	55		1	28	09/15/17	09/15/17 22:13	1035
Benzene	**9.9**	ug/kg	14	J	1	6.9	09/15/17	09/15/17 22:13	1035
Bromochloromethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Bromodichloromethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Bromoform	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Bromomethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
2-Butanone (MEK)	ND	ug/kg	55		1	28	09/15/17	09/15/17 22:13	1035
Carbon Disulfide	ND	ug/kg	28		1	14	09/15/17	09/15/17 22:13	1035
Carbon tetrachloride	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Chlorobenzene	**16**	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Chloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Chloroform	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Chloromethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2-Dibromo-3-chloropropane	ND	ug/kg	110		1	55	09/15/17	09/15/17 22:13	1035
Dibromochloromethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2-Dibromoethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2-Dichlorobenzene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,3-Dichlorobenzene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,4-Dichlorobenzene	**11**	ug/kg	14	J	1	6.9	09/15/17	09/15/17 22:13	1035
1,1-Dichloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2-Dichloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,1-Dichloroethene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2-Dichloropropane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
cis-1,2-Dichloroethene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
cis-1,3-Dichloropropene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
trans-1,2-Dichloroethene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
trans-1,3-Dichloropropene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Ethylbenzene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
2-Hexanone (MBK)	ND	ug/kg	55		1	28	09/15/17	09/15/17 22:13	1035
Methylene chloride	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 17091507

ERM, Inc. - Annapolis, Annapolis, MD

October 10, 2017

Project Name: FMC Mud Tubs
Project Location: 1701 E Patapsco Ave.
Project ID: 414901

Sample ID: MP-2 (VOC 3) **Date/Time Sampled: 09/14/2017 14:05** **PSS Sample ID: 17091507-004**
Matrix: SOIL **Date/Time Received: 09/15/2017 12:10** **% Solids: 38**

VOCs (Project Specific List) Analytical Method: SW-846 8260 B Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/kg	55		1	28	09/15/17	09/15/17 22:13	1035
Styrene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,1,2,2-Tetrachloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Tetrachloroethene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Toluene	**28**	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,2,4-Trichlorobenzene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,1,1-Trichloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
1,1,2-Trichloroethane	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Trichloroethene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
Vinyl Chloride	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035
m&p-Xylene	ND	ug/kg	28		1	14	09/15/17	09/15/17 22:13	1035
o-Xylene	ND	ug/kg	14		1	6.9	09/15/17	09/15/17 22:13	1035

Case Narrative Summary

Client Name: ERM, Inc. - Annapolis

Project Name: FMC Mud Tubs

Work Order Number(s): 17091507
Project ID: 414901

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Sample(s) received at a temperature greater than 6 degrees C and ice was present.

17091507: Analyses associated with analyst code 4001 were performed by ALS Group USA, Corp. - PA - PA 22-00293 VA 460157

General Comments:
Metals list changed from TAL metals to PP metals, per client.

Analytical:

VOCs (Project Specific List)
Batch: 146127
Surrogate exceedances identified; see surrogate summary form.

SVOC (Additional Compounds)
Batch: 146570
Compound p-(Dimethylamino)azobenzene analyzed on 9/29/17 at 13:19.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): 17091507
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Mud Tubs
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SM2540G	MP-2 (VOC 1)	Initial	17091507-002	1062	S	146165	146165	09/14/2017	09/19/2017 09:43	09/19/2017 09:43
	MP-2 (VOC 2)	Initial	17091507-003	1062	S	146165	146165	09/14/2017	09/19/2017 09:43	09/19/2017 09:43
	MP-2 (VOC 3)	Initial	17091507-004	1062	S	146165	146165	09/14/2017	09/19/2017 09:43	09/19/2017 09:43
	MP-2	Initial	17091507-001	1062	S	146226	146226	09/14/2017	09/20/2017 14:57	09/20/2017 14:57
SW-846 6020 A	MP-2	Initial	17091507-001	1051	S	67832	146214	09/14/2017	09/19/2017 09:21	09/19/2017 20:53
	67832-1-BKS	BKS	67832-1-BKS	1051	S	67832	146214	--------	09/19/2017 09:21	09/19/2017 20:08
	67832-1-BLK	BLK	67832-1-BLK	1051	S	67832	146214	--------	09/19/2017 09:21	09/19/2017 20:02
	Profile S	MS	17091513-003 S	1051	S	67832	146214	09/14/2017	09/19/2017 09:21	09/19/2017 20:21
	Profile SD	MSD	17091513-003 SD	1051	S	67832	146214	09/14/2017	09/19/2017 09:21	09/19/2017 20:28
	MP-2	Reanalysis	17091507-001	1051	S	67832	146257	09/14/2017	09/19/2017 09:21	09/20/2017 22:40
SW-846 8260 B	MP-2 (VOC 2)	Initial	17091507-003	1035	S	67817	146127	09/14/2017	09/15/2017 10:55	09/15/2017 21:33
	MP-2 (VOC 3)	Initial	17091507-004	1035	S	67817	146127	09/14/2017	09/15/2017 10:55	09/15/2017 22:13
	67817-1-BKS	BKS	67817-1-BKS	1035	S	67817	146127	--------	09/15/2017 10:55	09/15/2017 12:15
	67817-1-BLK	BLK	67817-1-BLK	1035	S	67817	146127	--------	09/15/2017 10:55	09/15/2017 12:54
	S-12 - Post ex S	MS	17091402-006 S	1035	S	67817	146127	09/08/2017	09/15/2017 10:55	09/15/2017 19:34
	S-12 - Post ex SD	MSD	17091402-006 SD	1035	S	67817	146127	09/08/2017	09/15/2017 10:55	09/15/2017 20:13
	MP-2 (VOC 1)	Initial	17091507-002	1035	S	67844	146181	09/14/2017	09/18/2017 11:10	09/18/2017 21:10
	67844-1-BKS	BKS	67844-1-BKS	1035	S	67844	146181	--------	09/18/2017 11:10	09/18/2017 12:30
	67844-1-BLK	BLK	67844-1-BLK	1035	S	67844	146181	--------	09/18/2017 11:10	09/18/2017 13:10
	PE-1 S	MS	17091513-001 S	1035	S	67844	146181	09/14/2017	09/18/2017 11:10	09/18/2017 17:50
	PE-1 SD	MSD	17091513-001 SD	1035	S	67844	146181	09/14/2017	09/18/2017 11:10	09/18/2017 18:30
SW-846 8270 C	MP-2	Initial	17091507-001	4001	S	67845	146570	09/14/2017	09/28/2017 00:00	09/28/2017 21:26
SW-846 8270 C	67845-1-BKS	BKS	67845-1-BKS	1055	S	67845	146262	--------	09/19/2017 14:26	09/19/2017 20:41
	67845-1-BLK	BLK	67845-1-BLK	1055	S	67845	146262	--------	09/19/2017 14:26	09/19/2017 20:13
	67845-1-BSD	BSD	67845-1-BSD	1055	S	67845	146262	--------	09/19/2017 14:26	09/19/2017 21:09
	MP-2	Initial	17091507-001	1055	S	67845	146312	09/14/2017	09/19/2017 14:26	09/21/2017 18:08
	MP-2 S	MS	17091507-001 S	1055	S	67845	146312	09/14/2017	09/19/2017 14:26	09/21/2017 18:35

Analytical Data Package Information Summary

Work Order(s): 17091507
Report Prepared For: ERM, Inc. - Annapolis, Annapolis, MD
Project Name: FMC Mud Tubs
Project Manager: Lindsey France

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8270 C	MP-2 SD	MSD	17091507-001 SD	1055	S	67845	146312	09/14/2017	09/19/2017 14:26	09/21/2017 19:02

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146312 Matrix: Soil Date Prep: 09/19/2017
PSS Sample ID: 17091507-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	83		32-107	%	09/21/17 18:08
2-Fluorophenol	77		34-113	%	09/21/17 18:08
Nitrobenzene-d5	72		35-123	%	09/21/17 18:08
Phenol-d6	80		34-120	%	09/21/17 18:08
Terphenyl-D14	92		46-154	%	09/21/17 18:08
2,4,6-Tribromophenol	93		31-113	%	09/21/17 18:08

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146570 Matrix: Soil Date Prep: 09/28/2017
PSS Sample ID: 17091507-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl			62-100	%	09/28/17 21:26
2-Fluorophenol			48-94	%	09/28/17 21:26
Nitrobenzene-d5			57-114	%	09/28/17 21:26
Phenol-d6			49-103	%	09/28/17 21:26
Terphenyl-D14			39-143	%	09/28/17 21:26
2,4,6-Tribromophenol			65-102	%	09/28/17 21:26

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 146181 Matrix: Soil Date Prep: 09/18/2017
PSS Sample ID: 17091507-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	99		82-126	%	09/18/17 21:10
Dibromofluoromethane	103		92-113	%	09/18/17 21:10
Toluene-D8	98		94-105	%	09/18/17 21:10

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 146127 Matrix: Soil Date Prep: 09/15/2017
PSS Sample ID: 17091507-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	101		82-126	%	09/15/17 21:33
Dibromofluoromethane	103		92-113	%	09/15/17 21:33
Toluene-D8	100		94-105	%	09/15/17 21:33

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 146127 Matrix: Soil Date Prep: 09/15/2017
PSS Sample ID: 17091507-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	102		82-126	%	09/15/17 22:13
Dibromofluoromethane	105		92-113	%	09/15/17 22:13
Toluene-D8	98		94-105	%	09/15/17 22:13

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 6020 A Prep Method: SW3050B
Seq Number: 146214 Matrix: Solid Date Prep: 09/19/17
MB Sample Id: 67832-1-BLK LCS Sample Id: 67832-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Aluminum	<20.52	82.07	91.26	111	80-120	mg/kg	09/19/17 20:08	
Antimony	<1.026	16.41	18.03	110	80-120	mg/kg	09/19/17 20:08	
Arsenic	<0.2052	16.41	17.42	106	80-120	mg/kg	09/19/17 20:08	
Barium	<1.026	16.41	17.28	105	80-120	mg/kg	09/19/17 20:08	
Beryllium	<1.026	16.41	17.70	108	80-120	mg/kg	09/19/17 20:08	
Cadmium	<1.026	16.41	16.56	101	80-120	mg/kg	09/19/17 20:08	
Calcium	<20.52	164.1	179.7	110	80-120	mg/kg	09/19/17 20:08	
Chromium	<1.026	16.41	17.28	105	80-120	mg/kg	09/19/17 20:08	
Cobalt	<1.026	16.41	16.65	101	80-120	mg/kg	09/19/17 20:08	
Copper	<1.026	16.41	17.12	104	80-120	mg/kg	09/19/17 20:08	
Iron	<20.52	164.1	178.3	109	80-120	mg/kg	09/19/17 20:08	
Lead	<1.026	16.41	17.31	105	80-120	mg/kg	09/19/17 20:08	
Magnesium	<20.52	164.1	180	110	80-120	mg/kg	09/19/17 20:08	
Manganese	<1.026	16.41	16.89	103	80-120	mg/kg	09/19/17 20:08	
Mercury	<0.04103	0.4103	0.4185	102	80-120	mg/kg	09/19/17 20:08	
Nickel	<1.026	16.41	16.50	101	80-120	mg/kg	09/19/17 20:08	
Potassium	<20.52	164.1	175	107	80-120	mg/kg	09/19/17 20:08	
Selenium	<1.026	16.41	16.53	101	80-120	mg/kg	09/19/17 20:08	
Silver	<1.026	16.41	16.56	101	80-120	mg/kg	09/19/17 20:08	
Sodium	<20.52	164.1	152.8	93	80-120	mg/kg	09/19/17 20:08	
Thallium	<0.8207	16.41	15.82	96	80-120	mg/kg	09/19/17 20:08	
Vanadium	<1.026	16.41	17.27	105	80-120	mg/kg	09/19/17 20:08	
Zinc	<4.103	82.07	80.84	99	80-120	mg/kg	09/19/17 20:08	

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146262 Matrix: Solid Date Prep: 09/19/17
MB Sample Id: 67845-1-BLK LCS Sample Id: 67845-1-BKS LCSD Sample Id: 67845-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<16.61	1329	1177	89	1182	89	60-116	0	25	ug/kg	09/19/17 20:41	
Acenaphthylene	<16.61	1329	1168	88	1198	90	61-112	3	25	ug/kg	09/19/17 20:41	
Anthracene	<16.61	1329	1231	93	1249	94	66-115	1	25	ug/kg	09/19/17 20:41	
Benzidine	<83.06	1329	1378	104	1314	99	1-125	5	25	ug/kg	09/19/17 20:41	
Benzo(a)anthracene	<16.61	1329	1308	98	1339	101	71-113	2	25	ug/kg	09/19/17 20:41	
Benzo(a)pyrene	<16.61	1329	1353	102	1399	105	69-118	3	25	ug/kg	09/19/17 20:41	
Benzo(b)fluoranthene	<16.61	1329	1447	109	1358	102	65-126	6	25	ug/kg	09/19/17 20:41	
Benzo(g,h,i)perylene	<16.61	1329	1335	100	1374	103	69-112	3	25	ug/kg	09/19/17 20:41	
Benzo(k)fluoranthene	<16.61	1329	1184	89	1393	105	57-129	16	25	ug/kg	09/19/17 20:41	
Butyl benzyl phthalate	<83.06	1329	1559	117	1531	115	81-111	2	25	ug/kg	09/19/17 20:41	H
bis(2-chloroethoxy) methane	<83.06	1329	1175	88	1199	90	56-119	2	25	ug/kg	09/19/17 20:41	
bis(2-chloroethyl) ether	<83.06	1329	1038	78	1113	84	55-107	7	25	ug/kg	09/19/17 20:41	
bis(2-chloroisopropyl) ether	<83.06	1329	878.4	66	904.6	68	44-103	3	25	ug/kg	09/19/17 20:41	
bis(2-ethylhexyl) phthalate	<83.06	1329	1578	119	1545	116	84-109	2	25	ug/kg	09/19/17 20:41	H
4-Bromophenylphenyl ether	<83.06	1329	1280	96	1353	102	63-125	6	25	ug/kg	09/19/17 20:41	
Di-n-butyl phthalate	<83.06	1329	1354	102	1419	107	76-110	5	25	ug/kg	09/19/17 20:41	
Carbazole	<83.06	1329	1701	128	1649	124	58-133	3	25	ug/kg	09/19/17 20:41	
4-Chloro-3-methylphenol	<83.06	1329	1245	94	1270	95	74-119	2	25	ug/kg	09/19/17 20:41	
4-Chloroaniline	<166.1	1329	1360	102	1471	111	45-107	8	25	ug/kg	09/19/17 20:41	H
2-Chloronaphthalene	<83.06	1329	1238	93	1235	93	56-113	0	25	ug/kg	09/19/17 20:41	
2-Chlorophenol	<83.06	1329	1142	86	1207	91	59-113	6	25	ug/kg	09/19/17 20:41	
4-Chlorophenyl phenyl ether	<83.06	1329	1154	87	1166	88	62-111	1	25	ug/kg	09/19/17 20:41	
Chrysene	<16.61	1329	1309	98	1318	99	72-114	1	25	ug/kg	09/19/17 20:41	
Dibenz(a,h)anthracene	<16.61	1329	1357	102	1378	104	72-110	2	25	ug/kg	09/19/17 20:41	
Dibenzofuran	<83.06	1329	1219	92	1196	90	62-118	2	25	ug/kg	09/19/17 20:41	
3,3-Dichlorobenzidine	<83.06	1329	2142	161	2193	165	66-141	2	25	ug/kg	09/19/17 20:41	H
2,4-Dichlorophenol	<83.06	1329	1269	95	1305	98	68-118	3	25	ug/kg	09/19/17 20:41	
Diethyl phthalate	<83.06	1329	1332	100	1365	103	61-113	2	25	ug/kg	09/19/17 20:41	
Dimethyl phthalate	<83.06	1329	1346	101	1398	105	69-109	4	25	ug/kg	09/19/17 20:41	
2,4-Dimethylphenol	<83.06	1329	1233	93	1220	92	57-122	1	25	ug/kg	09/19/17 20:41	
4,6-Dinitro-2-methyl phenol	<83.06	1329	1466	110	1357	102	50-134	8	25	ug/kg	09/19/17 20:41	
2,4-Dinitrophenol	<166.1	1329	1241	93	1191	90	24-144	4	25	ug/kg	09/19/17 20:41	
2,4-Dinitrotoluene	<83.06	1329	1389	105	1363	102	61-124	2	25	ug/kg	09/19/17 20:41	
2,6-Dinitrotoluene	<83.06	1329	1347	101	1428	107	59-124	6	25	ug/kg	09/19/17 20:41	
1,2-Diphenylhydrazine	<83.06	1329	1439	108	1497	113	59-117	4	25	ug/kg	09/19/17 20:41	
Fluoranthene	<16.61	1329	1243	94	1308	98	69-119	5	25	ug/kg	09/19/17 20:41	
Fluorene	<16.61	1329	1163	88	1170	88	65-115	1	25	ug/kg	09/19/17 20:41	
Hexachlorobenzene	<83.06	1329	1240	93	1250	94	63-118	1	25	ug/kg	09/19/17 20:41	
Hexachlorobutadiene	<83.06	1329	1184	89	1229	92	55-120	4	25	ug/kg	09/19/17 20:41	
Hexachlorocyclopentadiene	<83.06	1329	1196	90	1194	90	29-138	0	25	ug/kg	09/19/17 20:41	
Hexachloroethane	<83.06	1329	1134	85	1181	89	54-110	4	25	ug/kg	09/19/17 20:41	
Indeno(1,2,3-c,d)pyrene	<16.61	1329	1344	101	1366	103	60-127	2	25	ug/kg	09/19/17 20:41	
Isophorone	<83.06	1329	1303	98	1351	102	57-116	4	25	ug/kg	09/19/17 20:41	
2-Methylnaphthalene	<16.61	1329	1085	82	1117	84	70-109	3	25	ug/kg	09/19/17 20:41	
2-Methylphenol	<83.06	1329	1293	97	1309	98	59-118	1	25	ug/kg	09/19/17 20:41	
3&4-Methylphenol	<83.06	1329	1196	90	1225	92	59-113	2	25	ug/kg	09/19/17 20:41	
Naphthalene	<16.61	1329	1102	83	1150	86	59-108	4	25	ug/kg	09/19/17 20:41	
2-Nitroaniline	<83.06	1329	1270	96	1262	95	51-116	1	25	ug/kg	09/19/17 20:41	
3-Nitroaniline	<83.06	1329	1516	114	1548	116	57-111	2	25	ug/kg	09/19/17 20:41	H
4-Nitroaniline	<166.1	1329	1470	111	1446	109	55-125	2	25	ug/kg	09/19/17 20:41	
Nitrobenzene	<83.06	1329	1152	87	1182	89	53-110	3	25	ug/kg	09/19/17 20:41	

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146262 Matrix: Solid Date Prep: 09/19/17
MB Sample Id: 67845-1-BLK LCS Sample Id: 67845-1-BKS LCSD Sample Id: 67845-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
2-Nitrophenol	<83.06	1329	1300	98	1355	102	58-124	4	25	ug/kg	09/19/17 20:41	
4-Nitrophenol	<83.06	1329	1168	88	1370	103	51-116	16	25	ug/kg	09/19/17 20:41	
N-Nitrosodimethylamine	<83.06	1329	1077	81	1099	83	45-116	2	25	ug/kg	09/19/17 20:41	
N-Nitrosodi-n-Propylamine	<83.06	1329	1220	92	1249	94	60-98	2	25	ug/kg	09/19/17 20:41	
Di-n-octyl phthalate	<166.1	1329	1488	112	1561	117	69-120	5	25	ug/kg	09/19/17 20:41	
Pentachlorophenol	<166.1	1329	1367	103	1419	107	56-124	4	25	ug/kg	09/19/17 20:41	
Phenanthrene	<16.61	1329	1171	88	1281	96	67-117	9	25	ug/kg	09/19/17 20:41	
Phenol	<83.06	1329	1129	85	1157	87	58-114	2	25	ug/kg	09/19/17 20:41	
Pyrene	<16.61	1329	1320	99	1396	105	77-111	6	25	ug/kg	09/19/17 20:41	
2,4,5-Trichlorophenol	<83.06	1329	1302	98	1256	94	64-114	4	25	ug/kg	09/19/17 20:41	
2,4,6-Trichlorophenol	<83.06	1329	1267	95	1322	99	60-125	4	25	ug/kg	09/19/17 20:41	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	101		90		88		32-107	%	09/19/17 20:41
2-Fluorophenol	101		84		85		34-113	%	09/19/17 20:41
Nitrobenzene-d5	93		81		80		35-123	%	09/19/17 20:41
Phenol-d6	95		86		86		34-120	%	09/19/17 20:41
Terphenyl-D14	95		96		95		46-154	%	09/19/17 20:41
2,4,6-Tribromophenol	103		100		99		31-113	%	09/19/17 20:41

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146312 Matrix: Soil Date Prep: 09/19/17
Parent Sample Id: 17091507-001 MS Sample Id: 17091507-001 S MSD Sample Id: 17091507-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	28.25	1846	1702	91	1573	85	61-106	8	30	ug/kg	09/21/17 18:35	
Acenaphthylene	<23.07	1846	1749	95	1598	88	60-104	9	30	ug/kg	09/21/17 18:35	
Anthracene	<23.07	1846	1698	92	1480	81	68-110	14	30	ug/kg	09/21/17 18:35	
Benzidine	<115.3	1846	1200	65	936.7	51	2-126	25	30	ug/kg	09/21/17 18:35	
Benzo(a)anthracene	<23.07	1846	1934	105	1736	95	70-111	11	30	ug/kg	09/21/17 18:35	
Benzo(a)pyrene	<23.07	1846	2025	110	1802	99	71-114	12	30	ug/kg	09/21/17 18:35	
Benzo(b)fluoranthene	<23.07	1846	1978	107	1837	101	68-120	7	30	ug/kg	09/21/17 18:35	
Benzo(g,h,i)perylene	<23.07	1846	2148	116	1911	105	64-117	12	30	ug/kg	09/21/17 18:35	
Benzo(k)fluoranthene	<23.07	1846	1967	107	1589	87	60-128	21	30	ug/kg	09/21/17 18:35	
Butyl benzyl phthalate	<115.3	1846	2238	121	1987	109	74-111	12	30	ug/kg	09/21/17 18:35	X
bis(2-chloroethoxy) methane	<115.3	1846	1626	88	1531	84	55-109	6	30	ug/kg	09/21/17 18:35	
bis(2-chloroethyl) ether	<115.3	1846	1530	83	1348	74	53-98	13	30	ug/kg	09/21/17 18:35	
bis(2-chloroisopropyl) ether	<115.3	1846	1253	68	1158	64	43-93	8	30	ug/kg	09/21/17 18:35	
bis(2-ethylhexyl) phthalate	<115.3	1846	2322	126	2048	113	75-114	13	30	ug/kg	09/21/17 18:35	X
4-Bromophenylphenyl ether	<115.3	1846	1809	98	1672	92	67-114	8	30	ug/kg	09/21/17 18:35	
Di-n-butyl phthalate	<115.3	1846	2004	109	1780	98	72-106	12	30	ug/kg	09/21/17 18:35	X
Carbazole	<115.3	1846	2217	120	2062	113	63-132	7	30	ug/kg	09/21/17 18:35	
4-Chloro-3-methylphenol	<115.3	1846	1819	99	1664	91	68-113	9	30	ug/kg	09/21/17 18:35	
4-Chloroaniline	<230.7	1846	1867	101	1618	89	45-100	14	30	ug/kg	09/21/17 18:35	X
2-Chloronaphthalene	<115.3	1846	1745	95	1668	92	56-104	5	30	ug/kg	09/21/17 18:35	
2-Chlorophenol	<115.3	1846	1648	89	1471	81	60-97	11	30	ug/kg	09/21/17 18:35	
4-Chlorophenyl phenyl ether	<115.3	1846	1697	92	1575	87	61-104	7	30	ug/kg	09/21/17 18:35	
Chrysene	<23.07	1846	1918	104	1673	92	72-114	14	30	ug/kg	09/21/17 18:35	
Dibenz(a,h)anthracene	<23.07	1846	2130	115	1874	103	69-112	13	30	ug/kg	09/21/17 18:35	X
Dibenzofuran	<115.3	1846	1767	96	1667	92	63-109	6	30	ug/kg	09/21/17 18:35	
3,3-Dichlorobenzidine	<115.3	1846	3058	166	2681	147	74-134	13	30	ug/kg	09/21/17 18:35	X
2,4-Dichlorophenol	<115.3	1846	1810	98	1619	89	63-109	11	30	ug/kg	09/21/17 18:35	
Diethyl phthalate	<115.3	1846	1942	105	1819	100	60-108	7	30	ug/kg	09/21/17 18:35	
Dimethyl phthalate	<115.3	1846	2008	109	1805	99	64-104	11	30	ug/kg	09/21/17 18:35	X
2,4-Dimethylphenol	<115.3	1846	1881	102	1757	97	44-107	7	30	ug/kg	09/21/17 18:35	
4,6-Dinitro-2-methyl phenol	<115.3	1846	1994	108	1848	102	51-130	8	30	ug/kg	09/21/17 18:35	
2,4-Dinitrophenol	<230.7	1846	1731	94	1608	88	12-150	7	30	ug/kg	09/21/17 18:35	
2,4-Dinitrotoluene	<115.3	1846	2021	109	1810	99	61-123	11	30	ug/kg	09/21/17 18:35	
2,6-Dinitrotoluene	<115.3	1846	1987	108	1864	102	58-120	6	30	ug/kg	09/21/17 18:35	
1,2-Diphenylhydrazine	<115.3	1846	2039	110	1913	105	61-112	6	30	ug/kg	09/21/17 18:35	
Fluoranthene	<23.07	1846	1745	95	1720	95	69-114	1	30	ug/kg	09/21/17 18:35	
Fluorene	44.20	1846	1758	93	1649	88	66-106	6	30	ug/kg	09/21/17 18:35	
Hexachlorobenzene	<115.3	1846	1722	93	1598	88	63-114	7	30	ug/kg	09/21/17 18:35	
Hexachlorobutadiene	<115.3	1846	1613	87	1480	81	55-107	9	30	ug/kg	09/21/17 18:35	
Hexachlorocyclopentadiene	<115.3	1846	1147	62	1182	65	36-120	3	30	ug/kg	09/21/17 18:35	
Hexachloroethane	<115.3	1846	1528	83	1437	79	52-99	6	30	ug/kg	09/21/17 18:35	
Indeno(1,2,3-c,d)pyrene	<23.07	1846	2080	113	1847	101	63-123	12	30	ug/kg	09/21/17 18:35	
Isophorone	<115.3	1846	1787	97	1687	93	57-106	6	30	ug/kg	09/21/17 18:35	
2-Methylnaphthalene	81.12	1846	1510	77	1387	72	63-102	8	30	ug/kg	09/21/17 18:35	
2-Methylphenol	<115.3	1846	1873	101	1713	94	60-103	9	30	ug/kg	09/21/17 18:35	
3&4-Methylphenol	<115.3	1846	1837	100	1740	96	58-101	5	30	ug/kg	09/21/17 18:35	
Naphthalene	29.17	1846	1599	85	1500	81	59-97	6	30	ug/kg	09/21/17 18:35	
2-Nitroaniline	<115.3	1846	1820	99	1714	94	52-109	6	30	ug/kg	09/21/17 18:35	
3-Nitroaniline	<115.3	1846	2166	117	1904	105	59-109	13	30	ug/kg	09/21/17 18:35	X
4-Nitroaniline	<230.7	1846	1625	88	1564	86	60-121	4	30	ug/kg	09/21/17 18:35	
Nitrobenzene	<115.3	1846	1595	86	1475	81	52-100	8	30	ug/kg	09/21/17 18:35	

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 146312 Matrix: Soil Date Prep: 09/19/17
Parent Sample Id: 17091507-001 MS Sample Id: 17091507-001 S MSD Sample Id: 17091507-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
2-Nitrophenol	<115.3	1846	1798	97	1696	93	62-109	6	30	ug/kg	09/21/17 18:35	
4-Nitrophenol	<115.3	1846	1439	78	1464	80	48-114	2	30	ug/kg	09/21/17 18:35	
N-Nitrosodi-n-Propylamine	<115.3	1846	1639	89	1538	85	50-96	6	30	ug/kg	09/21/17 18:35	
N-Nitrosodiphenylamine	<115.3	1846	1950	106	1786	98	64-108	9	30	ug/kg	09/21/17 18:35	
Di-n-octyl phthalate	<230.7	1846	2204	119	1940	107	69-117	13	30	ug/kg	09/21/17 18:35	X
Pentachlorophenol	<230.7	1846	1871	101	1803	99	66-114	4	30	ug/kg	09/21/17 18:35	
Phenanthrene	<23.07	1846	1895	103	1728	95	67-115	9	30	ug/kg	09/21/17 18:35	
Phenol	<115.3	1846	1680	91	1559	86	55-106	7	30	ug/kg	09/21/17 18:35	
Pyrene	<23.07	1846	1939	105	1751	96	67-116	10	30	ug/kg	09/21/17 18:35	
2,4,5-Trichlorophenol	<115.3	1846	1730	94	1607	88	65-107	7	30	ug/kg	09/21/17 18:35	
2,4,6-Trichlorophenol	<115.3	1846	1923	104	1732	95	62-114	10	30	ug/kg	09/21/17 18:35	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	79		86		32-107	%	09/21/17 18:35
2-Fluorophenol	74		80		34-113	%	09/21/17 18:35
Nitrobenzene-d5	68		76		35-123	%	09/21/17 18:35
Phenol-d6	80		87		34-120	%	09/21/17 18:35
Terphenyl-D14	86		92		46-154	%	09/21/17 18:35
2,4,6-Tribromophenol	94		99		31-113	%	09/21/17 18:35

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 146127 Matrix: Solid Date Prep: 09/15/17
MB Sample Id: 67817-1-BLK LCS Sample Id: 67817-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<10.00	60.00	54.37	91	46-127	ug/kg	09/15/17 12:15	
Benzene	<2.500	60.00	64.81	108	70-127	ug/kg	09/15/17 12:15	
Bromochloromethane	<2.500	60.00	61.44	102	68-122	ug/kg	09/15/17 12:15	
Bromodichloromethane	<2.500	60.00	62.47	104	68-122	ug/kg	09/15/17 12:15	
Bromoform	<2.500	60.00	56.68	94	57-127	ug/kg	09/15/17 12:15	
Bromomethane	<2.500	60.00	62.16	104	68-123	ug/kg	09/15/17 12:15	
2-Butanone (MEK)	<10.00	60.00	59.74	100	41-136	ug/kg	09/15/17 12:15	
Carbon Disulfide	<5.000	60.00	57.78	96	66-135	ug/kg	09/15/17 12:15	
Carbon tetrachloride	<2.500	60.00	62.80	105	64-147	ug/kg	09/15/17 12:15	
Chlorobenzene	<2.500	60.00	59.47	99	70-121	ug/kg	09/15/17 12:15	
Chloroethane	<2.500	60.00	62.27	104	66-142	ug/kg	09/15/17 12:15	
Chloroform	<2.500	60.00	60.60	101	68-123	ug/kg	09/15/17 12:15	
Chloromethane	<2.500	60.00	61.92	103	65-136	ug/kg	09/15/17 12:15	
1,2-Dibromo-3-chloropropane	<20.00	60.00	54.21	90	55-122	ug/kg	09/15/17 12:15	
Dibromochloromethane	<2.500	60.00	57.42	96	61-122	ug/kg	09/15/17 12:15	
1,2-Dibromoethane	<2.500	60.00	57.03	95	63-119	ug/kg	09/15/17 12:15	
1,2-Dichlorobenzene	<2.500	60.00	59.33	99	65-121	ug/kg	09/15/17 12:15	
1,3-Dichlorobenzene	<2.500	60.00	59.55	99	69-121	ug/kg	09/15/17 12:15	
1,4-Dichlorobenzene	<2.500	60.00	58.68	98	69-118	ug/kg	09/15/17 12:15	
1,1-Dichloroethane	<2.500	60.00	63.59	106	70-127	ug/kg	09/15/17 12:15	
1,2-Dichloroethane	<2.500	60.00	60.11	100	68-118	ug/kg	09/15/17 12:15	
1,1-Dichloroethene	<2.500	60.00	63.59	106	69-133	ug/kg	09/15/17 12:15	
1,2-Dichloropropane	<2.500	60.00	63.69	106	70-122	ug/kg	09/15/17 12:15	
cis-1,2-Dichloroethene	<2.500	60.00	64.27	107	68-126	ug/kg	09/15/17 12:15	
cis-1,3-Dichloropropene	<2.500	60.00	65.14	109	68-121	ug/kg	09/15/17 12:15	
trans-1,2-Dichloroethene	<2.500	60.00	64.17	107	70-132	ug/kg	09/15/17 12:15	
trans-1,3-Dichloropropene	<2.500	60.00	62.60	104	67-115	ug/kg	09/15/17 12:15	
Ethylbenzene	<2.500	60.00	61.69	103	70-125	ug/kg	09/15/17 12:15	
2-Hexanone (MBK)	<10.00	60.00	52.67	88	40-121	ug/kg	09/15/17 12:15	
Methylene chloride	<2.500	60.00	59.74	100	67-121	ug/kg	09/15/17 12:15	
4-Methyl-2-Pentanone (MIBK)	<10.00	60.00	52.69	88	48-117	ug/kg	09/15/17 12:15	
Styrene	<2.500	60.00	63.26	105	71-120	ug/kg	09/15/17 12:15	
1,1,2,2-Tetrachloroethane	<2.500	60.00	54.77	91	59-122	ug/kg	09/15/17 12:15	
Tetrachloroethene	<2.500	60.00	63.46	106	65-145	ug/kg	09/15/17 12:15	
Toluene	<2.500	60.00	64.62	108	69-129	ug/kg	09/15/17 12:15	
1,2,4-Trichlorobenzene	<2.500	60.00	57.02	95	64-115	ug/kg	09/15/17 12:15	
1,1,1-Trichloroethane	<2.500	60.00	64.73	108	65-139	ug/kg	09/15/17 12:15	
1,1,2-Trichloroethane	<2.500	60.00	62.04	103	64-125	ug/kg	09/15/17 12:15	
Trichloroethene	<2.500	60.00	63.69	106	69-133	ug/kg	09/15/17 12:15	
Vinyl Chloride	<2.500	60.00	72.02	120	69-142	ug/kg	09/15/17 12:15	
m&p-Xylene	<5.000	120	123.9	103	71-124	ug/kg	09/15/17 12:15	
o-Xylene	<2.500	60.00	63.02	105	72-123	ug/kg	09/15/17 12:15	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	119		90		82-126	%	09/15/17 12:15
Dibromofluoromethane	101		100		92-113	%	09/15/17 12:15
Toluene-D8	98		106	*	94-105	%	09/15/17 12:15

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

Analytical Method: SW-846 8260 B Prep Method: SW5030
Seq Number: 146181 Matrix: Solid Date Prep: 09/18/17
MB Sample Id: 67844-1-BLK LCS Sample Id: 67844-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<10.00	60.00	56.28	94	46-127	ug/kg	09/18/17 12:30	
Benzene	<2.500	60.00	62.81	105	70-127	ug/kg	09/18/17 12:30	
Bromochloromethane	<2.500	60.00	57.81	96	68-122	ug/kg	09/18/17 12:30	
Bromodichloromethane	<2.500	60.00	59.21	99	68-122	ug/kg	09/18/17 12:30	
Bromoform	<2.500	60.00	57.58	96	57-127	ug/kg	09/18/17 12:30	
Bromomethane	<2.500	60.00	59.35	99	68-123	ug/kg	09/18/17 12:30	
2-Butanone (MEK)	<10.00	60.00	57.12	95	41-136	ug/kg	09/18/17 12:30	
Carbon Disulfide	<5.000	60.00	56.96	95	66-135	ug/kg	09/18/17 12:30	
Carbon tetrachloride	<2.500	60.00	63.55	106	64-147	ug/kg	09/18/17 12:30	
Chlorobenzene	<2.500	60.00	61.61	103	70-121	ug/kg	09/18/17 12:30	
Chloroethane	<2.500	60.00	60.00	100	66-142	ug/kg	09/18/17 12:30	
Chloroform	<2.500	60.00	58.33	97	68-123	ug/kg	09/18/17 12:30	
Chloromethane	<2.500	60.00	57.91	97	65-136	ug/kg	09/18/17 12:30	
1,2-Dibromo-3-chloropropane	<20.00	60.00	53.05	88	55-122	ug/kg	09/18/17 12:30	
Dibromochloromethane	<2.500	60.00	57.25	95	61-122	ug/kg	09/18/17 12:30	
1,2-Dibromoethane	<2.500	60.00	57.97	97	63-119	ug/kg	09/18/17 12:30	
1,2-Dichlorobenzene	<2.500	60.00	58.11	97	65-121	ug/kg	09/18/17 12:30	
1,3-Dichlorobenzene	<2.500	60.00	59.96	100	69-121	ug/kg	09/18/17 12:30	
1,4-Dichlorobenzene	<2.500	60.00	58.73	98	69-118	ug/kg	09/18/17 12:30	
1,1-Dichloroethane	<2.500	60.00	60.51	101	70-127	ug/kg	09/18/17 12:30	
1,2-Dichloroethane	<2.500	60.00	57.53	96	68-118	ug/kg	09/18/17 12:30	
1,1-Dichloroethene	<2.500	60.00	61.64	103	69-133	ug/kg	09/18/17 12:30	
1,2-Dichloropropane	<2.500	60.00	60.92	102	70-122	ug/kg	09/18/17 12:30	
cis-1,2-Dichloroethene	<2.500	60.00	61.72	103	68-126	ug/kg	09/18/17 12:30	
cis-1,3-Dichloropropene	<2.500	60.00	61.41	102	68-121	ug/kg	09/18/17 12:30	
trans-1,2-Dichloroethene	<2.500	60.00	62.32	104	70-132	ug/kg	09/18/17 12:30	
trans-1,3-Dichloropropene	<2.500	60.00	59.84	100	67-115	ug/kg	09/18/17 12:30	
Ethylbenzene	<2.500	60.00	64.14	107	70-125	ug/kg	09/18/17 12:30	
2-Hexanone (MBK)	<10.00	60.00	48.58	81	40-121	ug/kg	09/18/17 12:30	
Methylene chloride	<2.500	60.00	61.08	102	67-121	ug/kg	09/18/17 12:30	
4-Methyl-2-Pentanone (MIBK)	<10.00	60.00	49.08	82	48-117	ug/kg	09/18/17 12:30	
Styrene	<2.500	60.00	64.91	108	71-120	ug/kg	09/18/17 12:30	
1,1,2,2-Tetrachloroethane	<2.500	60.00	54.25	90	59-122	ug/kg	09/18/17 12:30	
Tetrachloroethene	<2.500	60.00	63.39	106	65-145	ug/kg	09/18/17 12:30	
Toluene	<2.500	60.00	63.60	106	69-129	ug/kg	09/18/17 12:30	
1,2,4-Trichlorobenzene	<2.500	60.00	57.17	95	64-115	ug/kg	09/18/17 12:30	
1,1,1-Trichloroethane	<2.500	60.00	63.49	106	65-139	ug/kg	09/18/17 12:30	
1,1,2-Trichloroethane	<2.500	60.00	57.68	96	64-125	ug/kg	09/18/17 12:30	
Trichloroethene	<2.500	60.00	62.53	104	69-133	ug/kg	09/18/17 12:30	
Vinyl Chloride	<2.500	60.00	67.69	113	69-142	ug/kg	09/18/17 12:30	
m&p-Xylene	<5.000	120	131.2	109	71-124	ug/kg	09/18/17 12:30	
o-Xylene	<2.500	60.00	64.97	108	72-123	ug/kg	09/18/17 12:30	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	125		89		82-126	%	09/18/17 12:30
Dibromofluoromethane	96		95		92-113	%	09/18/17 12:30
Toluene-D8	97		100		94-105	%	09/18/17 12:30

PHASE SEPARATION SCIENCE, INC.

QC Summary 17091507

ERM, Inc. - Annapolis
FMC Mud Tubs

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1)

*CLIENT: ERM *OFFICE LOC. Annapolis

*PROJECT MGR: L. Franco *PHONE NO.: (410 266 0006

EMAIL: Lindsey.franco@erm FAX NO.: ( )

*PROJECT NAME: FMC Mud Tubs PROJECT NO.: 414901

SITE LOCATION: 1701 E. Patapsco P.O. NO.:

SAMPLER(S): S. Georgiou DW CERT NO.:

PSS Work Order #: 17091507 PAGE 1 OF 1

Matrix Codes: **SW**=Surface Wtr **DW**=Drinking Wtr **GW**=Ground Wtr **WW**=Waste Wtr **O**=Oil **S**=Soil **L**=Liquid **SOL**=Solid **A**=Air **WI**=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used												REMARKS
							Analysis/ Method Required (3) *	TCL VOC	TCL SVOC	TAL Metals									
1	MP-2	9/14/17	1420	S	2	C	1	1	1										
2	MP-2(VOC1)	9/14/17	1404	S	1	G	1												
3	MP-2(VOC2)	9/14/17	1403	S	1	G	1												
4	MP-2(VOC3)	9/14/17	1405	S	1	G	1												

(5)

Relinquished By:	Date	Time	Received By:
(1)	9/14/17	11:45	
(2)	9/15/17	1210	
(3)			
(4)			

(4)

*Requested TAT (One TAT per COC): ■ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required: COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER ____

Special Instructions: See Contract

DW COMPLIANCE? YES ☐ EDD FORMAT TYPE ____

STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER ____

# of Coolers: 1

Custody Seal: Cooler-Intact

Ice Present: PRES Temp: 8°-10°C

Shipping Carrier: 17DE

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	17091507	**Received By**	Thomas Wingate
Client Name	ERM, Inc. - Annapolis	**Date Received**	09/15/2017 12:10:00 PM
Project Name	FMC Mud Tubs	**Delivered By**	Trans Time Express
Project Number	414901	**Tracking No**	Not Applicable
Disposal Date	10/20/2017	**Logged In By**	Thomas Wingate

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	10
Seal(s) Signed / Dated?	Yes	Temp Blank Present	No

Documentation

		Sampler Name	S. Georgius
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 4 Total No. of Containers Received 14

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Sample(s) received at a temperature greater than 6 degrees C and ice was present.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 09/15/2017

Thomas Wingate

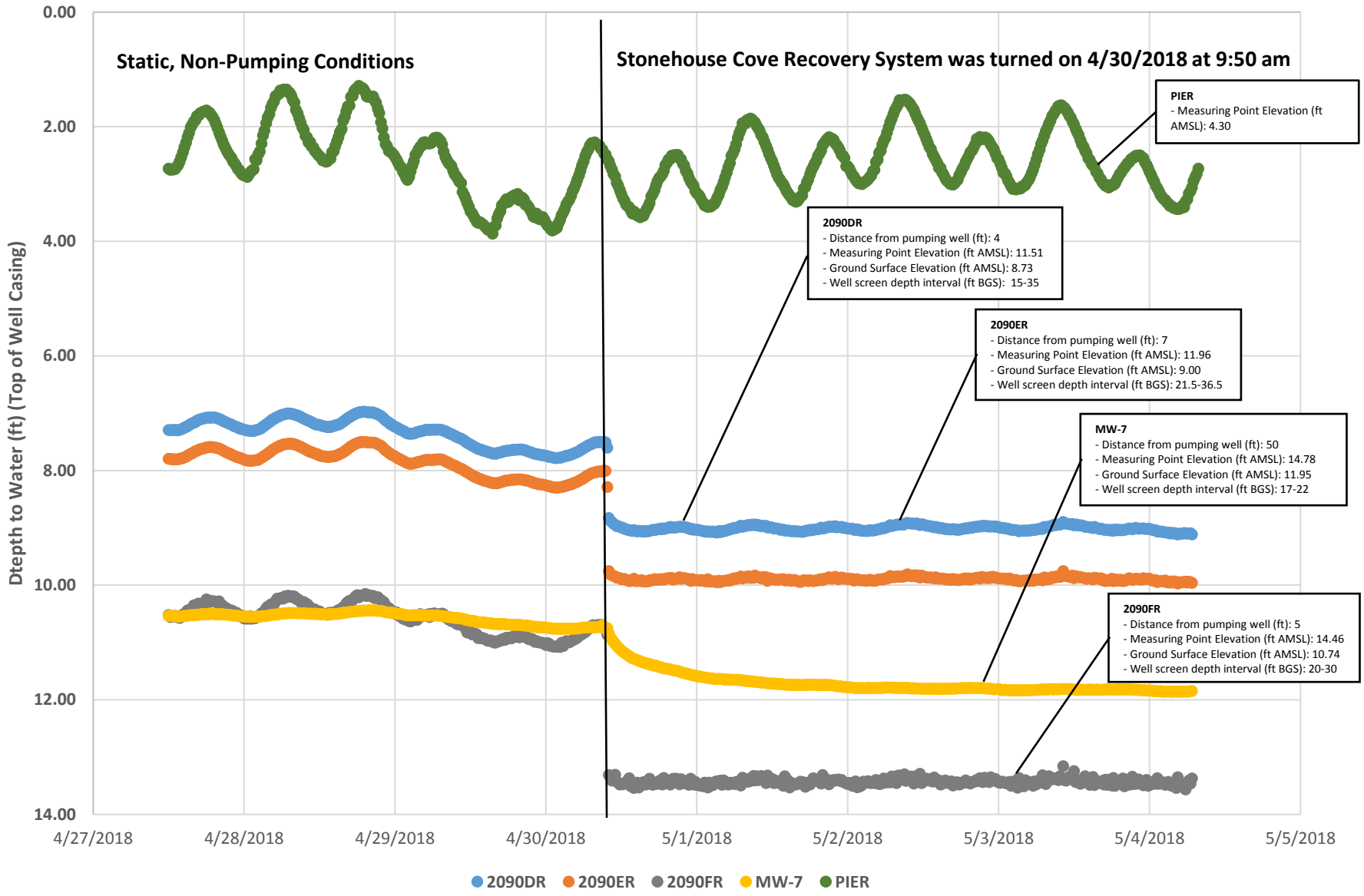
PM Review and Approval: Amber Confer Date: 09/15/2017

Amber Confer

APPENDIX H

SYSTEM-WIDE PUMPING TEST DATA

FIGURE 1. STONEHOUSE COVE SHALLOW SYSTEM TEST



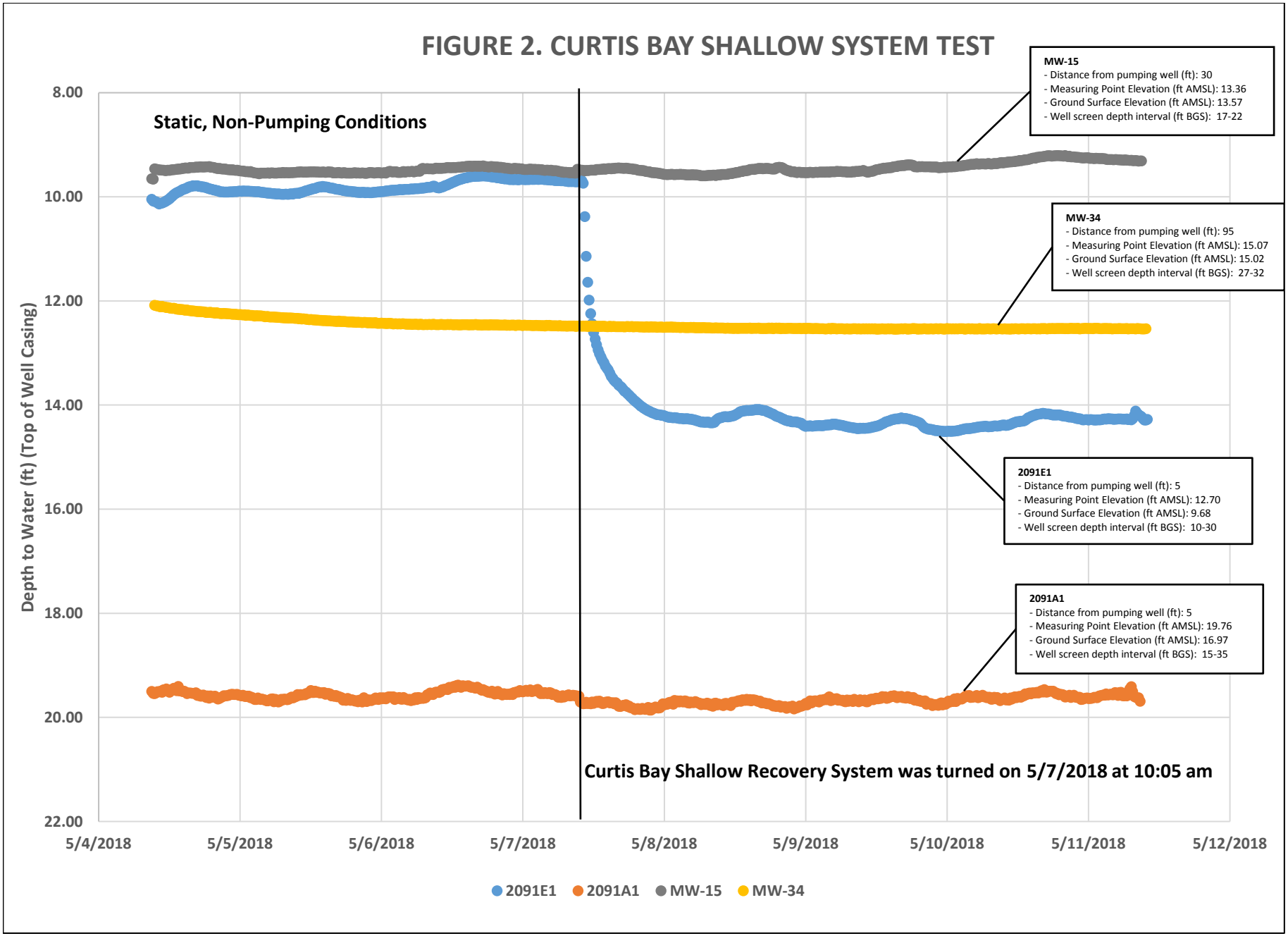
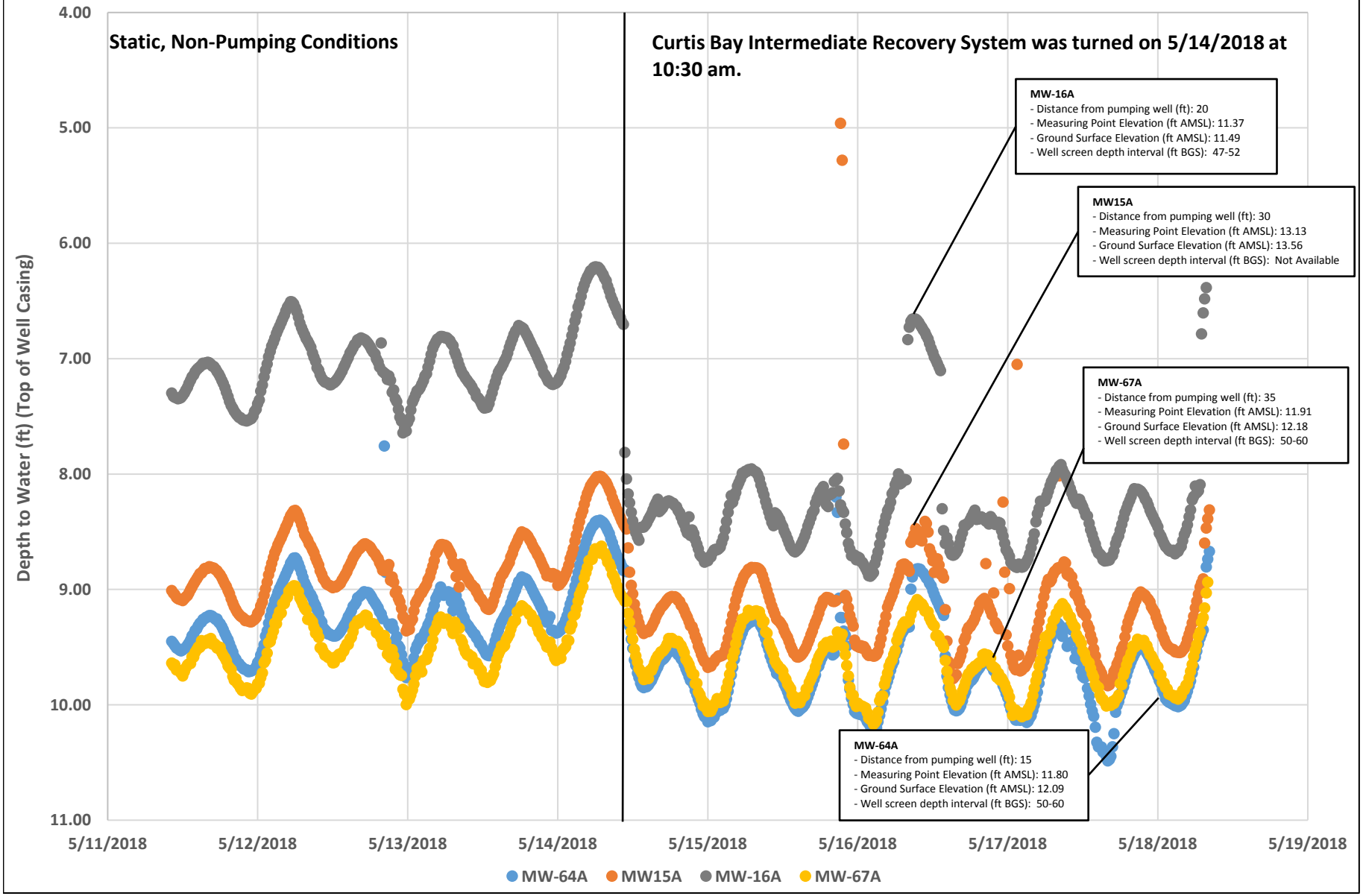


FIGURE 2. CURTIS BAY SHALLOW SYSTEM TEST
Static, Non-Pumping Conditions
MW-15
- Distance from pumping well (ft): 30
- Measuring Point Elevation (ft AMSL): 13.36
- Ground Surface Elevation (ft AMSL): 13.57
- Well screen depth interval (ft BGS): 17-22
MW-34
- Distance from pumping well (ft): 95
- Measuring Point Elevation (ft AMSL): 15.07
- Ground Surface Elevation (ft AMSL): 15.02
- Well screen depth interval (ft BGS): 27-32
2091E1
- Distance from pumping well (ft): 5
- Measuring Point Elevation (ft AMSL): 12.70
- Ground Surface Elevation (ft AMSL): 9.68
- Well screen depth interval (ft BGS): 10-30
2091A1
- Distance from pumping well (ft): 5
- Measuring Point Elevation (ft AMSL): 19.76
- Ground Surface Elevation (ft AMSL): 16.97
- Well screen depth interval (ft BGS): 15-35
Curtis Bay Shallow Recovery System was turned on 5/7/2018 at 10:05 am
Depth to Water (ft) (Top of Well Casing)
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
5/4/2018
5/5/2018
5/6/2018
5/7/2018
5/8/2018
5/9/2018
5/10/2018
5/11/2018
5/12/2018
2091E1
2091A1
MW-15
MW-34

FIGURE 3. CURTIS BAY INTERMEDIATE SYSTEM TEST



2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/27/2018 12:00	0	12.762614	15.946793	7.292992
4/27/2018 12:15	900	12.761721	15.932236	7.295029
4/27/2018 12:30	1800	12.760367	15.950439	7.298113
4/27/2018 12:45	2700	12.762449	15.959198	7.293368
4/27/2018 13:00	3600	12.763909	15.970139	7.29004
4/27/2018 13:15	4500	12.760624	15.959915	7.297528
4/27/2018 13:30	5400	12.760649	15.940247	7.297472
4/27/2018 13:45	6300	12.765022	15.964294	7.287503
4/27/2018 14:00	7200	12.767621	15.965744	7.281579
4/27/2018 14:15	8100	12.773	15.962845	7.26932
4/27/2018 14:30	9000	12.780643	15.940247	7.251898
4/27/2018 14:45	9900	12.785112	15.94899	7.241712
4/27/2018 15:00	10800	12.792168	15.977417	7.22563
4/27/2018 15:15	11700	12.798977	15.973038	7.21011
4/27/2018 15:30	12600	12.809383	15.976685	7.18639
4/27/2018 15:45	13500	12.813936	15.946793	7.176013
4/27/2018 16:00	14400	12.820511	15.940247	7.161027
4/27/2018 16:15	15300	12.82326	15.944626	7.154761
4/27/2018 16:30	16200	12.83384	15.948257	7.130645
4/27/2018 16:45	17100	12.839042	15.960648	7.11879
4/27/2018 17:00	18000	12.844193	15.94899	7.107048
4/27/2018 17:15	18900	12.848287	15.957016	7.097718
4/27/2018 17:30	19800	12.849233	15.946793	7.095562
4/27/2018 17:45	20700	12.855277	15.952637	7.081785
4/27/2018 18:00	21600	12.855783	15.949707	7.08063
4/27/2018 18:15	22500	12.858793	15.958466	7.07377
4/27/2018 18:30	23400	12.859019	15.963562	7.073255
4/27/2018 18:45	24300	12.857345	15.949707	7.077072
4/27/2018 19:00	25200	12.859373	15.951172	7.072448
4/27/2018 19:15	26100	12.857694	15.950439	7.076276
4/27/2018 19:30	27000	12.856229	15.978134	7.079615
4/27/2018 19:45	27900	12.852741	15.957748	7.087564
4/27/2018 20:00	28800	12.846468	15.951904	7.101863
4/27/2018 20:15	29700	12.843479	15.946075	7.108675
4/27/2018 20:30	30600	12.8366	15.969406	7.124355
4/27/2018 20:45	31500	12.830341	15.960648	7.138621
4/27/2018 21:00	32400	12.823936	15.961365	7.15322
4/27/2018 21:15	33300	12.818048	15.966476	7.16664
4/27/2018 21:30	34200	12.813279	15.97377	7.177511
4/27/2018 21:45	35100	12.808495	15.946793	7.188416
4/27/2018 22:00	36000	12.802981	15.959198	7.200983
4/27/2018 22:15	36900	12.796916	15.941696	7.214808

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/27/2018 22:30	37800	12.789987	15.951904	7.230602
4/27/2018 22:45	38700	12.78602	15.976685	7.239642
4/27/2018 23:00	39600	12.782661	15.965744	7.247298
4/27/2018 23:15	40500	12.774582	15.949707	7.265714
4/27/2018 23:30	41400	12.773125	15.931503	7.269035
4/27/2018 23:45	42300	12.768954	15.947525	7.278541
4/28/2018 0:00	43200	12.763651	15.943161	7.290629
4/28/2018 0:15	44100	12.762039	15.987625	7.294302
4/28/2018 0:30	45000	12.758916	15.946075	7.301421
4/28/2018 0:45	45900	12.75714	15.962845	7.305469
4/28/2018 1:00	46800	12.755272	15.925659	7.309727
4/28/2018 1:15	47700	12.755708	15.962845	7.308734
4/28/2018 1:30	48600	12.755311	15.967209	7.309638
4/28/2018 1:45	49500	12.761064	15.940964	7.296526
4/28/2018 2:00	50400	12.763304	15.948257	7.29142
4/28/2018 2:15	51300	12.766563	15.954086	7.28399
4/28/2018 2:30	52200	12.770841	15.954086	7.274241
4/28/2018 2:45	53100	12.778328	15.944626	7.257175
4/28/2018 3:00	54000	12.787978	15.938049	7.235179
4/28/2018 3:15	54900	12.795065	15.971573	7.219027
4/28/2018 3:30	55800	12.806327	15.951904	7.193357
4/28/2018 3:45	56700	12.81348	15.965744	7.177052
4/28/2018 4:00	57600	12.82414	15.950439	7.152757
4/28/2018 4:15	58500	12.830592	15.926392	7.138049
4/28/2018 4:30	59400	12.842539	15.927841	7.110819
4/28/2018 4:45	60300	12.847589	15.966476	7.099309
4/28/2018 5:00	61200	12.857288	15.967941	7.0772
4/28/2018 5:15	62100	12.861522	15.949707	7.067551
4/28/2018 5:30	63000	12.866634	15.954086	7.055898
4/28/2018 5:45	63900	12.872682	15.973038	7.042114
4/28/2018 6:00	64800	12.876432	15.956284	7.033565
4/28/2018 6:15	65700	12.881722	15.959198	7.021507
4/28/2018 6:30	66600	12.884216	15.954819	7.015823
4/28/2018 6:45	67500	12.886617	15.933685	7.010352
4/28/2018 7:00	68400	12.890224	15.938049	7.002131
4/28/2018 7:15	69300	12.888048	15.970139	7.007089
4/28/2018 7:30	70200	12.887603	15.957016	7.008104
4/28/2018 7:45	71100	12.884646	15.938049	7.014843
4/28/2018 8:00	72000	12.880494	15.970139	7.024307
4/28/2018 8:15	72900	12.878067	15.939514	7.02984
4/28/2018 8:30	73800	12.872988	15.979599	7.041417
4/28/2018 8:45	74700	12.869507	15.976685	7.049351

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/28/2018 9:00	75600	12.863002	15.948257	7.064178
4/28/2018 9:15	76500	12.857052	15.948257	7.077739
4/28/2018 9:30	77400	12.849615	15.962845	7.09469
4/28/2018 9:45	78300	12.843407	15.951172	7.108841
4/28/2018 10:00	79200	12.837473	15.956284	7.122366
4/28/2018 10:15	80100	12.833357	15.930771	7.131748
4/28/2018 10:30	81000	12.828367	15.978134	7.14312
4/28/2018 10:45	81900	12.822065	15.951172	7.157485
4/28/2018 11:00	82800	12.815964	15.949707	7.171392
4/28/2018 11:15	83700	12.808184	15.954086	7.189125
4/28/2018 11:30	84600	12.804593	15.958466	7.197309
4/28/2018 11:45	85500	12.804176	15.965027	7.198259
4/28/2018 12:00	86400	12.801083	15.954819	7.20531
4/28/2018 12:15	87300	12.795617	15.966476	7.217768
4/28/2018 12:30	88200	12.791931	15.936584	7.22617
4/28/2018 12:45	89100	12.790004	15.959198	7.230563
4/28/2018 13:00	90000	12.788359	15.959198	7.234312
4/28/2018 13:15	90900	12.784867	15.962097	7.24227
4/28/2018 13:30	91800	12.787112	15.948257	7.237153
4/28/2018 13:45	92700	12.785957	15.971573	7.239786
4/28/2018 14:00	93600	12.790854	15.931503	7.228623
4/28/2018 14:15	94500	12.793431	15.963562	7.22275
4/28/2018 14:30	95400	12.797888	15.935135	7.212593
4/28/2018 14:45	96300	12.801856	15.953354	7.203547
4/28/2018 15:00	97200	12.803467	15.951904	7.199876
4/28/2018 15:15	98100	12.809504	15.923477	7.186117
4/28/2018 15:30	99000	12.816381	15.957016	7.170442
4/28/2018 15:45	99900	12.826853	15.938782	7.146572
4/28/2018 16:00	100800	12.835315	15.956284	7.127285
4/28/2018 16:15	101700	12.842766	15.974487	7.110301
4/28/2018 16:30	102600	12.853836	15.955551	7.085069
4/28/2018 16:45	103500	12.859423	15.954086	7.072335
4/28/2018 17:00	104400	12.867566	15.948257	7.053774
4/28/2018 17:15	105300	12.874994	15.950439	7.036843
4/28/2018 17:30	106200	12.883078	15.967209	7.018418
4/28/2018 17:45	107100	12.889339	15.964294	7.004146
4/28/2018 18:00	108000	12.892689	15.942429	6.996512
4/28/2018 18:15	108900	12.898047	15.936584	6.984298
4/28/2018 18:30	109800	12.900017	15.954819	6.979809
4/28/2018 18:45	110700	12.901823	15.952637	6.975692
4/28/2018 19:00	111600	12.903829	15.940964	6.971121
4/28/2018 19:15	112500	12.902234	15.950439	6.974755

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/28/2018 19:30	113400	12.898878	15.938782	6.982404
4/28/2018 19:45	114300	12.897525	15.959198	6.985489
4/28/2018 20:00	115200	12.897614	15.94899	6.985284
4/28/2018 20:15	116100	12.896643	15.940964	6.9875
4/28/2018 20:30	117000	12.897433	15.958466	6.985698
4/28/2018 20:45	117900	12.891209	15.940964	6.999886
4/28/2018 21:00	118800	12.889831	15.930038	7.003026
4/28/2018 21:15	119700	12.881197	15.947525	7.022705
4/28/2018 21:30	120600	12.877573	15.94899	7.030965
4/28/2018 21:45	121500	12.869197	15.938782	7.050057
4/28/2018 22:00	122400	12.85968	15.975952	7.071749
4/28/2018 22:15	123300	12.848197	15.946075	7.097922
4/28/2018 22:30	124200	12.836132	15.952637	7.125422
4/28/2018 22:45	125100	12.828063	15.931503	7.143814
4/28/2018 23:00	126000	12.820601	15.954086	7.160823
4/28/2018 23:15	126900	12.808272	15.930771	7.188923
4/28/2018 23:30	127800	12.803535	15.951172	7.199719
4/28/2018 23:45	128700	12.794386	15.938049	7.220574
4/29/2018 0:00	129600	12.787802	15.923477	7.235582
4/29/2018 0:15	130500	12.782463	15.957748	7.24775
4/29/2018 0:30	131400	12.775083	15.940247	7.264573
4/29/2018 0:45	132300	12.767006	15.959915	7.282982
4/29/2018 1:00	133200	12.763197	15.957016	7.291664
4/29/2018 1:15	134100	12.757032	15.957016	7.305715
4/29/2018 1:30	135000	12.75074	15.946793	7.320057
4/29/2018 1:45	135900	12.741425	15.927841	7.34129
4/29/2018 2:00	136800	12.736652	15.940964	7.352167
4/29/2018 2:15	137700	12.7348	15.943893	7.356388
4/29/2018 2:30	138600	12.733441	15.962097	7.359486
4/29/2018 2:45	139500	12.734012	15.914001	7.358186
4/29/2018 3:00	140400	12.73578	15.949707	7.354156
4/29/2018 3:15	141300	12.739233	15.958466	7.346285
4/29/2018 3:30	142200	12.746844	15.945358	7.328936
4/29/2018 3:45	143100	12.748389	15.943893	7.325415
4/29/2018 4:00	144000	12.752592	15.947525	7.315835
4/29/2018 4:15	144900	12.755836	15.946793	7.308443
4/29/2018 4:30	145800	12.757459	15.938782	7.304743
4/29/2018 4:45	146700	12.761968	15.939514	7.294466
4/29/2018 5:00	147600	12.763619	15.924927	7.2907
4/29/2018 5:15	148500	12.762204	15.953354	7.293926
4/29/2018 5:30	149400	12.764672	15.941696	7.288301
4/29/2018 5:45	150300	12.764584	15.950439	7.288503

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/29/2018 6:00	151200	12.765555	15.946793	7.286288
4/29/2018 6:15	152100	12.764672	15.951172	7.288301
4/29/2018 6:30	153000	12.764847	15.956284	7.287903
4/29/2018 6:45	153900	12.766207	15.940964	7.284803
4/29/2018 7:00	154800	12.766797	15.959915	7.283458
4/29/2018 7:15	155700	12.764808	15.959915	7.287992
4/29/2018 7:30	156600	12.762713	15.936584	7.292766
4/29/2018 7:45	157500	12.757743	15.943893	7.304095
4/29/2018 8:00	158400	12.754756	15.928574	7.310903
4/29/2018 8:15	159300	12.744967	15.948257	7.333214
4/29/2018 8:30	160200	12.741974	15.940964	7.340037
4/29/2018 8:45	161100	12.733691	15.956284	7.358916
4/29/2018 9:00	162000	12.730159	15.942429	7.366968
4/29/2018 9:15	162900	12.724507	15.955551	7.379849
4/29/2018 9:30	163800	12.717244	15.943161	7.396404
4/29/2018 9:45	164700	12.712179	15.946075	7.407949
4/29/2018 10:00	165600	12.705172	15.959198	7.423921
4/29/2018 10:15	166500	12.700911	15.941696	7.433633
4/29/2018 10:30	167400	12.696043	15.962097	7.444728
4/29/2018 10:45	168300	12.689261	15.940964	7.460186
4/29/2018 11:00	169200	12.681155	15.962097	7.478662
4/29/2018 11:15	170100	12.672533	15.959915	7.498314
4/29/2018 11:30	171000	12.664853	15.945358	7.51582
4/29/2018 11:45	171900	12.657668	15.940247	7.532197
4/29/2018 12:00	172800	12.65072	15.957016	7.548034
4/29/2018 12:15	173700	12.642762	15.934418	7.566172
4/29/2018 12:30	174600	12.637821	15.943893	7.577434
4/29/2018 12:45	175500	12.630809	15.943893	7.593417
4/29/2018 13:00	176400	12.623147	15.943893	7.61088
4/29/2018 13:15	177300	12.61773	15.964294	7.623227
4/29/2018 13:30	178200	12.614408	15.941696	7.630801
4/29/2018 13:45	179100	12.61182	15.944626	7.636698
4/29/2018 14:00	180000	12.605116	15.951904	7.651979
4/29/2018 14:15	180900	12.602829	15.94899	7.657192
4/29/2018 14:30	181800	12.599705	15.940964	7.664313
4/29/2018 14:45	182700	12.593819	15.931503	7.677729
4/29/2018 15:00	183600	12.590427	15.931503	7.685459
4/29/2018 15:15	184500	12.587117	15.947525	7.693004
4/29/2018 15:30	185400	12.581569	15.953354	7.70565
4/29/2018 15:45	186300	12.583481	15.951172	7.701292
4/29/2018 16:00	187200	12.580882	15.970856	7.707215
4/29/2018 16:15	188100	12.586804	15.963562	7.693717

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/29/2018 16:30	189000	12.587543	15.946793	7.692032
4/29/2018 16:45	189900	12.59112	15.959915	7.68388
4/29/2018 17:00	190800	12.593613	15.953354	7.678198
4/29/2018 17:15	191700	12.601164	15.924927	7.660987
4/29/2018 17:30	192600	12.600821	15.966476	7.661767
4/29/2018 17:45	193500	12.604839	15.933685	7.652609
4/29/2018 18:00	194400	12.604773	15.928574	7.652761
4/29/2018 18:15	195300	12.606431	15.971573	7.648982
4/29/2018 18:30	196200	12.607924	15.960648	7.64558
4/29/2018 18:45	197100	12.611495	15.939514	7.637439
4/29/2018 19:00	198000	12.610095	15.915451	7.64063
4/29/2018 19:15	198900	12.611767	15.952637	7.636819
4/29/2018 19:30	199800	12.612247	15.92421	7.635724
4/29/2018 19:45	200700	12.613084	15.926392	7.633818
4/29/2018 20:00	201600	12.613831	15.948257	7.632116
4/29/2018 20:15	202500	12.611273	15.937317	7.637946
4/29/2018 20:30	203400	12.609628	15.981796	7.641695
4/29/2018 20:45	204300	12.605462	15.941696	7.65119
4/29/2018 21:00	205200	12.601933	15.951172	7.659235
4/29/2018 21:15	206100	12.597089	15.936584	7.670275
4/29/2018 21:30	207000	12.593559	15.951904	7.67832
4/29/2018 21:45	207900	12.590197	15.927841	7.685985
4/29/2018 22:00	208800	12.584536	15.951904	7.698888
4/29/2018 22:15	209700	12.582195	15.943161	7.704222
4/29/2018 22:30	210600	12.577503	15.948257	7.714917
4/29/2018 22:45	211500	12.575544	15.935135	7.719382
4/29/2018 23:00	212400	12.574184	15.925659	7.722481
4/29/2018 23:15	213300	12.57093	15.936584	7.729898
4/29/2018 23:30	214200	12.571173	15.925659	7.729346
4/29/2018 23:45	215100	12.568458	15.953354	7.735535
4/30/2018 0:00	216000	12.565273	15.963562	7.742793
4/30/2018 0:15	216900	12.563371	15.959915	7.747129
4/30/2018 0:30	217800	12.557505	15.952637	7.7605
4/30/2018 0:45	218700	12.555215	15.937317	7.765719
4/30/2018 1:00	219600	12.55302	15.970139	7.770723
4/30/2018 1:15	220500	12.550087	15.942429	7.777407
4/30/2018 1:30	221400	12.548559	15.950439	7.780889
4/30/2018 1:45	222300	12.547986	15.911804	7.782196
4/30/2018 2:00	223200	12.549212	15.930038	7.779402
4/30/2018 2:15	224100	12.548991	15.964294	7.779904
4/30/2018 2:30	225000	12.553959	15.942429	7.768581
4/30/2018 2:45	225900	12.556677	15.950439	7.762386

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/30/2018 3:00	226800	12.560542	15.965744	7.753576
4/30/2018 3:15	227700	12.564834	15.94899	7.743795
4/30/2018 3:30	228600	12.567691	15.939514	7.737282
4/30/2018 3:45	229500	12.571163	15.949707	7.729368
4/30/2018 4:00	230400	12.574563	15.969406	7.721619
4/30/2018 4:15	231300	12.579965	15.938782	7.709307
4/30/2018 4:30	232200	12.584223	15.950439	7.699601
4/30/2018 4:45	233100	12.588655	15.954086	7.6895
4/30/2018 5:00	234000	12.594375	15.956284	7.676462
4/30/2018 5:15	234900	12.600166	15.941696	7.66326
4/30/2018 5:30	235800	12.609053	15.934418	7.643006
4/30/2018 5:45	236700	12.617311	15.947525	7.624182
4/30/2018 6:00	237600	12.623405	15.928574	7.610291
4/30/2018 6:15	238500	12.6315	15.92421	7.591841
4/30/2018 6:30	239400	12.639231	15.948257	7.574221
4/30/2018 6:45	240300	12.645041	15.939514	7.560978
4/30/2018 7:00	241200	12.650476	15.934418	7.548591
4/30/2018 7:15	242100	12.655632	15.930771	7.536837
4/30/2018 7:30	243000	12.661546	15.94899	7.523358
4/30/2018 7:45	243900	12.668317	15.935135	7.507925
4/30/2018 8:00	244800	12.668528	15.938782	7.507444
4/30/2018 8:15	245700	12.668707	15.932236	7.507036
4/30/2018 8:30	246600	12.672039	15.945358	7.499441
4/30/2018 8:45	247500	12.670127	15.950439	7.503799
4/30/2018 9:00	248400	12.669752	15.952637	7.504653
4/30/2018 9:15	249300	12.669405	15.932953	7.505445
4/30/2018 9:30	250200	12.668451	15.957748	7.507618
4/30/2018 9:45	251100	12.627437	15.971573	7.601103
4/30/2018 10:00	252000	12.088858	15.929306	8.828691
4/30/2018 10:15	252900	12.06806	15.948257	8.876095
4/30/2018 10:30	253800	12.056519	15.927841	8.902402
4/30/2018 10:45	254700	12.046464	15.938782	8.925319
4/30/2018 11:00	255600	12.036626	15.94899	8.947743
4/30/2018 11:15	256500	12.027972	15.947525	8.967467
4/30/2018 11:30	257400	12.027071	15.927841	8.969522
4/30/2018 11:45	258300	12.021732	15.923477	8.98169
4/30/2018 12:00	259200	12.015504	15.953354	8.995887
4/30/2018 12:15	260100	12.014185	15.940964	8.998893
4/30/2018 12:30	261000	12.007195	15.950439	9.014826
4/30/2018 12:45	261900	12.001997	15.930038	9.026673
4/30/2018 13:00	262800	11.999642	15.924927	9.03204
4/30/2018 13:15	263700	11.994984	15.953354	9.042659

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
4/30/2018 13:30	264600	11.995554	15.943893	9.041359
4/30/2018 13:45	265500	11.989789	15.941696	9.054499
4/30/2018 14:00	266400	11.996169	15.949707	9.039957
4/30/2018 14:15	267300	11.990488	15.946075	9.052905
4/30/2018 14:30	268200	11.985719	15.965027	9.063776
4/30/2018 14:45	269100	11.992012	15.934418	9.049432
4/30/2018 15:00	270000	11.987942	15.927124	9.058709
4/30/2018 15:15	270900	11.989052	15.932236	9.056179
4/30/2018 15:30	271800	11.984197	15.942429	9.067245
4/30/2018 15:45	272700	11.988976	15.935852	9.056351
4/30/2018 16:00	273600	11.985783	15.932953	9.063631
4/30/2018 16:15	274500	11.989031	15.943893	9.056227
4/30/2018 16:30	275400	11.988765	15.967209	9.056833
4/30/2018 16:45	276300	11.994719	15.963562	9.043262
4/30/2018 17:00	277200	11.998543	15.927124	9.034546
4/30/2018 17:15	278100	11.996454	15.928574	9.039307
4/30/2018 17:30	279000	11.999567	15.950439	9.032212
4/30/2018 17:45	279900	12.003046	15.957016	9.024282
4/30/2018 18:00	280800	12.005808	15.943161	9.017986
4/30/2018 18:15	281700	12.003311	15.940247	9.023678
4/30/2018 18:30	282600	12.010025	15.912537	9.008375
4/30/2018 18:45	283500	12.003872	15.957016	9.0224
4/30/2018 19:00	284400	12.009132	15.922745	9.010409
4/30/2018 19:15	285300	12.012654	15.950439	9.002382
4/30/2018 19:30	286200	12.016471	15.925659	8.993683
4/30/2018 19:45	287100	12.020703	15.951904	8.984035
4/30/2018 20:00	288000	12.01514	15.935135	8.996717
4/30/2018 20:15	288900	12.016674	15.938049	8.993219
4/30/2018 20:30	289800	12.015447	15.938782	8.996017
4/30/2018 20:45	290700	12.018334	15.923477	8.989435
4/30/2018 21:00	291600	12.020489	15.919846	8.984525
4/30/2018 21:15	292500	12.021928	15.936584	8.981245
4/30/2018 21:30	293400	12.020475	15.92128	8.984555
4/30/2018 21:45	294300	12.020837	15.951172	8.983731
4/30/2018 22:00	295200	12.0193	15.930038	8.987233
4/30/2018 22:15	296100	12.016543	15.943893	8.993517
4/30/2018 22:30	297000	12.01558	15.946075	8.995712
4/30/2018 22:45	297900	12.00879	15.923477	9.011189
4/30/2018 23:00	298800	12.00297	15.951172	9.024456
4/30/2018 23:15	299700	12.006431	15.936584	9.016567
4/30/2018 23:30	300600	11.998603	15.939514	9.03441
4/30/2018 23:45	301500	12.0004	15.951904	9.030313

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/1/2018 0:00	302400	11.999777	15.945358	9.031734
5/1/2018 0:15	303300	11.996749	15.950439	9.038635
5/1/2018 0:30	304200	11.995554	15.919113	9.041359
5/1/2018 0:45	305100	11.99112	15.939514	9.051464
5/1/2018 1:00	306000	11.989941	15.905991	9.054153
5/1/2018 1:15	306900	11.985103	15.951172	9.065181
5/1/2018 1:30	307800	11.983017	15.927124	9.069935
5/1/2018 1:45	308700	11.986881	15.939514	9.061127
5/1/2018 2:00	309600	11.983441	15.938049	9.068967
5/1/2018 2:15	310500	11.982188	15.938049	9.071823
5/1/2018 2:30	311400	11.985852	15.932236	9.063472
5/1/2018 2:45	312300	11.983365	15.948257	9.069141
5/1/2018 3:00	313200	11.978529	15.940964	9.080164
5/1/2018 3:15	314100	11.97789	15.941696	9.08162
5/1/2018 3:30	315000	11.988478	15.932953	9.057487
5/1/2018 3:45	315900	11.980867	15.936584	9.074834
5/1/2018 4:00	316800	11.989182	15.946793	9.055883
5/1/2018 4:15	317700	11.98833	15.944626	9.057825
5/1/2018 4:30	318600	11.989653	15.928574	9.05481
5/1/2018 4:45	319500	11.994444	15.930771	9.043889
5/1/2018 5:00	320400	11.999642	15.951172	9.03204
5/1/2018 5:15	321300	12.000956	15.951904	9.029047
5/1/2018 5:30	322200	12.009057	15.92128	9.010581
5/1/2018 5:45	323100	12.008504	15.932953	9.011842
5/1/2018 6:00	324000	12.013765	15.929306	8.999849
5/1/2018 6:15	324900	12.011423	15.94899	9.005188
5/1/2018 6:30	325800	12.018127	15.940247	8.989906
5/1/2018 6:45	326700	12.024172	15.939514	8.97613
5/1/2018 7:00	327600	12.031641	15.908157	8.959105
5/1/2018 7:15	328500	12.021248	15.937317	8.982795
5/1/2018 7:30	329400	12.02761	15.925659	8.968293
5/1/2018 7:45	330300	12.027201	15.939514	8.969226
5/1/2018 8:00	331200	12.033026	15.931503	8.955949
5/1/2018 8:15	332100	12.036495	15.952637	8.948041
5/1/2018 8:30	333000	12.032253	15.947525	8.957709
5/1/2018 8:45	333900	12.038631	15.951172	8.943172
5/1/2018 9:00	334800	12.034458	15.938782	8.952684
5/1/2018 9:15	335700	12.039751	15.942429	8.940619
5/1/2018 9:30	336600	12.032337	15.933685	8.957519
5/1/2018 9:45	337500	12.036351	15.931503	8.948369
5/1/2018 10:00	338400	12.028108	15.936584	8.967158
5/1/2018 10:15	339300	12.025264	15.930771	8.97364

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/1/2018 10:30	340200	12.029	15.928574	8.965124
5/1/2018 10:45	341100	12.028791	15.926392	8.9656
5/1/2018 11:00	342000	12.028865	15.931503	8.965433
5/1/2018 11:15	342900	12.015005	15.933685	8.997024
5/1/2018 11:30	343800	12.019584	15.941696	8.986588
5/1/2018 11:45	344700	12.019941	15.937317	8.985772
5/1/2018 12:00	345600	12.013065	15.911072	9.001445
5/1/2018 12:15	346500	12.008014	15.961365	9.012959
5/1/2018 12:30	347400	12.009815	15.94899	9.008853
5/1/2018 12:45	348300	12.008437	15.960648	9.011994
5/1/2018 13:00	349200	12.005811	15.950439	9.017981
5/1/2018 13:15	350100	11.998741	15.935135	9.034094
5/1/2018 13:30	351000	11.999014	15.922012	9.033472
5/1/2018 13:45	351900	12.000536	15.919113	9.030004
5/1/2018 14:00	352800	11.992982	15.916183	9.047221
5/1/2018 14:15	353700	11.993611	15.92421	9.045787
5/1/2018 14:30	354600	11.992907	15.903793	9.047393
5/1/2018 14:45	355500	11.991386	15.919113	9.050858
5/1/2018 15:00	356400	11.98826	15.927124	9.057983
5/1/2018 15:15	357300	11.988336	15.916916	9.057812
5/1/2018 15:30	358200	11.989378	15.908157	9.055435
5/1/2018 15:45	359100	11.988287	15.936584	9.057922
5/1/2018 16:00	360000	11.986486	15.946793	9.062027
5/1/2018 16:15	360900	11.98619	15.929306	9.062702
5/1/2018 16:30	361800	11.98385	15.926392	9.068034
5/1/2018 16:45	362700	11.98364	15.927124	9.068515
5/1/2018 17:00	363600	11.984326	15.951904	9.06695
5/1/2018 17:15	364500	11.991896	15.92421	9.049697
5/1/2018 17:30	365400	11.991045	15.926392	9.051636
5/1/2018 17:45	366300	11.992294	15.927124	9.048788
5/1/2018 18:00	367200	11.998122	15.946793	9.035505
5/1/2018 18:15	368100	11.995147	15.948257	9.042287
5/1/2018 18:30	369000	11.997913	15.927841	9.035981
5/1/2018 18:45	369900	12.000539	15.936584	9.029997
5/1/2018 19:00	370800	12.00317	15.922012	9.023999
5/1/2018 19:15	371700	12.003366	15.928574	9.023552
5/1/2018 19:30	372600	12.00558	15.928574	9.018507
5/1/2018 19:45	373500	12.015154	15.920563	8.996685
5/1/2018 20:00	374400	12.007667	15.931503	9.01375
5/1/2018 20:15	375300	12.009813	15.938049	9.008858
5/1/2018 20:30	376200	12.016254	15.957748	8.994176
5/1/2018 20:45	377100	12.017929	15.951172	8.990359

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/1/2018 21:00	378000	12.023535	15.926392	8.977582
5/1/2018 21:15	378900	12.021926	15.948257	8.981249
5/1/2018 21:30	379800	12.020754	15.935852	8.98392
5/1/2018 21:45	380700	12.022081	15.929306	8.980894
5/1/2018 22:00	381600	12.026432	15.932953	8.970978
5/1/2018 22:15	382500	12.018182	15.947525	8.989782
5/1/2018 22:30	383400	12.019577	15.930771	8.986603
5/1/2018 22:45	384300	12.019031	15.924927	8.987848
5/1/2018 23:00	385200	12.020966	15.914001	8.983438
5/1/2018 23:15	386100	12.014521	15.929306	8.998128
5/1/2018 23:30	387000	12.014866	15.930771	8.997341
5/1/2018 23:45	387900	12.010638	15.930771	9.006977
5/2/2018 0:00	388800	12.008151	15.946793	9.012646
5/2/2018 0:15	389700	12.008567	15.955551	9.011699
5/2/2018 0:30	390600	12.007265	15.920563	9.014666
5/2/2018 0:45	391500	12.007455	15.943161	9.014233
5/2/2018 1:00	392400	11.998938	15.955551	9.033647
5/2/2018 1:15	393300	11.997272	15.935852	9.037444
5/2/2018 1:30	394200	12.002742	15.941696	9.024976
5/2/2018 1:45	395100	11.998174	15.916183	9.035388
5/2/2018 2:00	396000	11.993745	15.938782	9.045483
5/2/2018 2:15	396900	11.990562	15.919846	9.052736
5/2/2018 2:30	397800	11.990488	15.950439	9.052905
5/2/2018 2:45	398700	11.990353	15.940964	9.053214
5/2/2018 3:00	399600	11.990759	15.927841	9.052288
5/2/2018 3:15	400500	11.98882	15.946075	9.056707
5/2/2018 3:30	401400	11.996169	15.92421	9.039957
5/2/2018 3:45	402300	11.994514	15.924927	9.043728
5/2/2018 4:00	403200	11.993744	15.915451	9.045485
5/2/2018 4:15	404100	11.994996	15.932236	9.04263
5/2/2018 4:30	405000	11.996037	15.935135	9.040257
5/2/2018 4:45	405900	12.002752	15.932953	9.024952
5/2/2018 5:00	406800	12.002684	15.930771	9.025108
5/2/2018 5:15	407700	12.006074	15.930771	9.017381
5/2/2018 5:30	408600	12.011886	15.931503	9.004134
5/2/2018 5:45	409500	12.01052	15.914719	9.007247
5/2/2018 6:00	410400	12.016395	15.931503	8.993856
5/2/2018 6:15	411300	12.01709	15.934418	8.992271
5/2/2018 6:30	412200	12.025678	15.943893	8.972697
5/2/2018 6:45	413100	12.034054	15.927841	8.953606
5/2/2018 7:00	414000	12.026513	15.914001	8.970793
5/2/2018 7:15	414900	12.031349	15.914001	8.95977

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/2/2018 7:30	415800	12.033144	15.914719	8.95568
5/2/2018 7:45	416700	12.038065	15.943161	8.944463
5/2/2018 8:00	417600	12.037798	15.929306	8.945072
5/2/2018 8:15	418500	12.037452	15.919846	8.945861
5/2/2018 8:30	419400	12.041053	15.914719	8.937653
5/2/2018 8:45	420300	12.038618	15.947525	8.943202
5/2/2018 9:00	421200	12.041074	15.941696	8.937605
5/2/2018 9:15	422100	12.049839	15.925659	8.917626
5/2/2018 9:30	423000	12.051844	15.92421	8.913057
5/2/2018 9:45	423900	12.050121	15.946075	8.916983
5/2/2018 10:00	424800	12.047217	15.930038	8.923602
5/2/2018 10:15	425700	12.04631	15.940964	8.925669
5/2/2018 10:30	426600	12.046252	15.947525	8.925802
5/2/2018 10:45	427500	12.044644	15.919113	8.929466
5/2/2018 11:00	428400	12.047906	15.938782	8.922032
5/2/2018 11:15	429300	12.042776	15.922745	8.933725
5/2/2018 11:30	430200	12.034055	15.946793	8.953604
5/2/2018 11:45	431100	12.040692	15.915451	8.938475
5/2/2018 12:00	432000	12.040899	15.917648	8.938003
5/2/2018 12:15	432900	12.034407	15.931503	8.952802
5/2/2018 12:30	433800	12.031706	15.938049	8.958958
5/2/2018 12:45	434700	12.028996	15.92128	8.965133
5/2/2018 13:00	435600	12.027404	15.924927	8.968763
5/2/2018 13:15	436500	12.024574	15.948257	8.975212
5/2/2018 13:30	437400	12.022081	15.956284	8.980894
5/2/2018 13:45	438300	12.018331	15.937317	8.989444
5/2/2018 14:00	439200	12.020612	15.927841	8.984244
5/2/2018 14:15	440100	12.018192	15.920563	8.989759
5/2/2018 14:30	441000	12.012437	15.919113	9.002877
5/2/2018 14:45	441900	12.011886	15.916183	9.004134
5/2/2018 15:00	442800	12.011137	15.945358	9.00584
5/2/2018 15:15	443700	12.007445	15.94899	9.014255
5/2/2018 15:30	444600	12.004197	15.946793	9.021658
5/2/2018 15:45	445500	12.004277	15.946793	9.021476
5/2/2018 16:00	446400	12.002538	15.92128	9.02544
5/2/2018 16:15	447300	12.003083	15.916183	9.024197
5/2/2018 16:30	448200	12.001296	15.937317	9.028271
5/2/2018 16:45	449100	12.004953	15.946075	9.019935
5/2/2018 17:00	450000	12.003246	15.92128	9.023826
5/2/2018 17:15	450900	11.999706	15.911804	9.031895
5/2/2018 17:30	451800	11.999625	15.935135	9.032079
5/2/2018 17:45	452700	11.998669	15.92421	9.03426

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/2/2018 18:00	453600	12.002956	15.927841	9.024487
5/2/2018 18:15	454500	12.004135	15.925659	9.021799
5/2/2018 18:30	455400	12.008858	15.928574	9.011036
5/2/2018 18:45	456300	12.010068	15.928574	9.008277
5/2/2018 19:00	457200	12.010296	15.928574	9.007757
5/2/2018 19:15	458100	12.011896	15.952637	9.00411
5/2/2018 19:30	459000	12.015631	15.933685	8.995598
5/2/2018 19:45	459900	12.014521	15.920563	8.998128
5/2/2018 20:00	460800	12.01896	15.957016	8.988009
5/2/2018 20:15	461700	12.022006	15.955551	8.981066
5/2/2018 20:30	462600	12.021255	15.927124	8.98278
5/2/2018 20:45	463500	12.025463	15.947525	8.973186
5/2/2018 21:00	464400	12.022564	15.943161	8.979795
5/2/2018 21:15	465300	12.027763	15.932953	8.967943
5/2/2018 21:30	466200	12.031566	15.912537	8.959277
5/2/2018 21:45	467100	12.026441	15.917648	8.970959
5/2/2018 22:00	468000	12.029133	15.917648	8.964822
5/2/2018 22:15	468900	12.024095	15.936584	8.976306
5/2/2018 22:30	469800	12.027071	15.92128	8.969522
5/2/2018 22:45	470700	12.023099	15.951904	8.978576
5/2/2018 23:00	471600	12.025678	15.914001	8.972697
5/2/2018 23:15	472500	12.024902	15.935852	8.974464
5/2/2018 23:30	473400	12.022069	15.931503	8.980923
5/2/2018 23:45	474300	12.02285	15.940964	8.979142
5/3/2018 0:00	475200	12.020186	15.918381	8.985214
5/3/2018 0:15	476100	12.013403	15.935852	9.000675
5/3/2018 0:30	477000	12.014182	15.922745	8.998899
5/3/2018 0:45	477900	12.011684	15.909622	9.004592
5/3/2018 1:00	478800	12.010782	15.932953	9.006649
5/3/2018 1:15	479700	12.009061	15.930038	9.010572
5/3/2018 1:30	480600	12.005808	15.922012	9.017986
5/3/2018 1:45	481500	12.002047	15.927124	9.02656
5/3/2018 2:00	482400	11.99909	15.936584	9.033298
5/3/2018 2:15	483300	11.996725	15.92421	9.03869
5/3/2018 2:30	484200	11.996939	15.930038	9.038202
5/3/2018 2:45	485100	11.996169	15.934418	9.039957
5/3/2018 3:00	486000	11.994007	15.922745	9.044885
5/3/2018 3:15	486900	11.988136	15.936584	9.058266
5/3/2018 3:30	487800	11.990488	15.947525	9.052905
5/3/2018 3:45	488700	11.991531	15.908157	9.050528
5/3/2018 4:00	489600	11.992781	15.930771	9.04768
5/3/2018 4:15	490500	11.992146	15.916916	9.049128

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/3/2018 4:30	491400	11.993606	15.918381	9.045799
5/3/2018 4:45	492300	11.993192	15.942429	9.046743
5/3/2018 5:00	493200	11.993402	15.915451	9.046265
5/3/2018 5:15	494100	11.998306	15.943893	9.035086
5/3/2018 5:30	495000	11.996029	15.925659	9.040277
5/3/2018 5:45	495900	11.997837	15.923477	9.036155
5/3/2018 6:00	496800	12.00116	15.933685	9.028582
5/3/2018 6:15	497700	12.003996	15.950439	9.022117
5/3/2018 6:30	498600	12.004756	15.919113	9.020385
5/3/2018 6:45	499500	12.010986	15.922012	9.006184
5/3/2018 7:00	500400	12.005248	15.949707	9.019263
5/3/2018 7:15	501300	12.020825	15.952637	8.983757
5/3/2018 7:30	502200	12.017841	15.935852	8.990559
5/3/2018 7:45	503100	12.019941	15.928574	8.985772
5/3/2018 8:00	504000	12.024704	15.919846	8.974916
5/3/2018 8:15	504900	12.024431	15.916183	8.975538
5/3/2018 8:30	505800	12.030183	15.929306	8.962429
5/3/2018 8:45	506700	12.036894	15.923477	8.947132
5/3/2018 9:00	507600	12.035451	15.924927	8.950421
5/3/2018 9:15	508500	12.037166	15.903793	8.946513
5/3/2018 9:30	509400	12.040616	15.927841	8.938648
5/3/2018 9:45	510300	12.038766	15.94899	8.942865
5/3/2018 10:00	511200	12.045266	15.954086	8.928049
5/3/2018 10:15	512100	12.058916	15.905258	8.896936
5/3/2018 10:30	513000	12.047698	15.961365	8.922506
5/3/2018 10:45	513900	12.046115	15.926392	8.926115
5/3/2018 11:00	514800	12.043063	15.939514	8.933071
5/3/2018 11:15	515700	12.042297	15.923477	8.934816
5/3/2018 11:30	516600	12.039309	15.930038	8.941628
5/3/2018 11:45	517500	12.044441	15.933685	8.92993
5/3/2018 12:00	518400	12.032049	15.942429	8.958175
5/3/2018 12:15	519300	12.037587	15.918381	8.945552
5/3/2018 12:30	520200	12.038142	15.927841	8.944287
5/3/2018 12:45	521100	12.030845	15.926392	8.96092
5/3/2018 13:00	522000	12.033285	15.929306	8.955358
5/3/2018 13:15	522900	12.032309	15.919846	8.957583
5/3/2018 13:30	523800	12.026225	15.906723	8.97145
5/3/2018 13:45	524700	12.021385	15.919846	8.982481
5/3/2018 14:00	525600	12.022079	15.941696	8.980901
5/3/2018 14:15	526500	12.019713	15.917648	8.986292
5/3/2018 14:30	527400	12.01764	15.927841	8.991017
5/3/2018 14:45	528300	12.015967	15.924927	8.99483

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/3/2018 15:00	529200	12.012377	15.943893	9.003015
5/3/2018 15:15	530100	12.020552	15.926392	8.984382
5/3/2018 15:30	531000	12.013555	15.953354	9.00033
5/3/2018 15:45	531900	12.010166	15.92421	9.008053
5/3/2018 16:00	532800	12.004272	15.919113	9.021486
5/3/2018 16:15	533700	12.007521	15.92128	9.014083
5/3/2018 16:30	534600	12.004772	15.935135	9.020348
5/3/2018 16:45	535500	11.998861	15.932236	9.03382
5/3/2018 17:00	536400	11.999549	15.920563	9.032253
5/3/2018 17:15	537300	11.997498	15.932953	9.036928
5/3/2018 17:30	538200	11.99824	15.936584	9.035237
5/3/2018 17:45	539100	11.993053	15.932953	9.047058
5/3/2018 18:00	540000	11.998388	15.920563	9.034899
5/3/2018 18:15	540900	11.991176	15.946793	9.051338
5/3/2018 18:30	541800	12.000116	15.928574	9.030959
5/3/2018 18:45	542700	11.995697	15.932953	9.041033
5/3/2018 19:00	543600	12.001569	15.939514	9.027649
5/3/2018 19:15	544500	11.995346	15.947525	9.041832
5/3/2018 19:30	545400	11.99803	15.920563	9.035716
5/3/2018 19:45	546300	11.995071	15.922012	9.042459
5/3/2018 20:00	547200	11.999143	15.923477	9.033179
5/3/2018 20:15	548100	12.001148	15.924927	9.028608
5/3/2018 20:30	549000	12.004416	15.945358	9.02116
5/3/2018 20:45	549900	12.010514	15.945358	9.007259
5/3/2018 21:00	550800	12.005998	15.949707	9.017554
5/3/2018 21:15	551700	12.002393	15.937317	9.025771
5/3/2018 21:30	552600	12.008436	15.946075	9.011996
5/3/2018 21:45	553500	12.014098	15.922012	8.999091
5/3/2018 22:00	554400	12.009813	15.927124	9.008858
5/3/2018 22:15	555300	12.005731	15.924927	9.018163
5/3/2018 22:30	556200	12.008567	15.930038	9.011699
5/3/2018 22:45	557100	12.009129	15.943893	9.010418
5/3/2018 23:00	558000	12.00932	15.928574	9.009981
5/3/2018 23:15	558900	12.005939	15.943161	9.017687
5/3/2018 23:30	559800	12.005382	15.938049	9.018959
5/3/2018 23:45	560700	12.008567	15.94899	9.011699
5/4/2018 0:00	561600	12.005516	15.910355	9.018652
5/4/2018 0:15	562500	12.001291	15.922012	9.028281
5/4/2018 0:30	563400	11.998464	15.938782	9.034727
5/4/2018 0:45	564300	11.995201	15.936584	9.042163
5/4/2018 1:00	565200	11.994233	15.930771	9.04437
5/4/2018 1:15	566100	11.985103	15.946075	9.065181

2090DR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/4/2018 1:30	567000	11.986544	15.915451	9.061896
5/4/2018 1:45	567900	11.983775	15.928574	9.068207
5/4/2018 2:00	568800	11.98529	15.926392	9.064754
5/4/2018 2:15	569700	11.979197	15.926392	9.078642
5/4/2018 2:30	570600	11.97968	15.942429	9.07754
5/4/2018 2:45	571500	11.975811	15.925659	9.086359
5/4/2018 3:00	572400	11.977962	15.925659	9.081457
5/4/2018 3:15	573300	11.969981	15.930771	9.099647
5/4/2018 3:30	574200	11.976436	15.923477	9.084935
5/4/2018 3:45	575100	11.969996	15.943893	9.099612
5/4/2018 4:00	576000	11.973861	15.927124	9.090804
5/4/2018 4:15	576900	11.968327	15.949707	9.103418
5/4/2018 4:30	577800	11.963829	15.906723	9.113669
5/4/2018 4:45	578700	11.966167	15.919113	9.108339
5/4/2018 5:00	579600	11.970822	15.943161	9.09773
5/4/2018 5:15	580500	11.968133	15.911804	9.10386
5/4/2018 5:30	581400	11.974144	15.957016	9.090158
5/4/2018 5:45	582300	11.972205	15.922012	9.094578
5/4/2018 6:00	583200	11.969375	15.948257	9.101029
5/4/2018 6:15	584100	11.970956	15.939514	9.097425
5/4/2018 6:30	585000	11.973235	15.92421	9.09223
5/4/2018 6:45	585900	11.96293	15.930771	9.115719
5/4/2018 7:00	586800	12.258489	15.927124	8.442049
5/4/2018 7:15	587700	12.392019	15.929306	8.137692
5/4/2018 7:30	588600	12.448057	15.932953	8.009964
5/4/2018 7:45	589500	12.481868	15.922745	7.932899
5/4/2018 8:00	590400	12.095496	15.928574	8.81356

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/27/2018 12:00	0	12.577142	15.898392	7.795634
4/27/2018 12:15	900	12.575663	15.878159	7.799006
4/27/2018 12:30	1800	12.574373	15.884674	7.801944
4/27/2018 12:45	2700	12.573659	15.888275	7.803573
4/27/2018 13:00	3600	12.572098	15.873108	7.807131
4/27/2018 13:15	4500	12.573161	15.878159	7.804707
4/27/2018 13:30	5400	12.573648	15.881042	7.803596
4/27/2018 13:45	6300	12.577405	15.881042	7.795034
4/27/2018 14:00	7200	12.578972	15.883224	7.791463
4/27/2018 14:15	8100	12.583689	15.882507	7.780712
4/27/2018 14:30	9000	12.588833	15.886124	7.768986
4/27/2018 14:45	9900	12.592853	15.881042	7.759824
4/27/2018 15:00	10800	12.601668	15.875275	7.73973
4/27/2018 15:15	11700	12.607506	15.880341	7.726425
4/27/2018 15:30	12600	12.615539	15.901276	7.708116
4/27/2018 15:45	13500	12.618719	15.878891	7.700867
4/27/2018 16:00	14400	12.62891	15.897675	7.677638
4/27/2018 16:15	15300	12.635416	15.920059	7.662809
4/27/2018 16:30	16200	12.638392	15.891159	7.656025
4/27/2018 16:45	17100	12.646015	15.896225	7.63865
4/27/2018 17:00	18000	12.651163	15.881775	7.626916
4/27/2018 17:15	18900	12.653258	15.893341	7.622141
4/27/2018 17:30	19800	12.656678	15.883942	7.614346
4/27/2018 17:45	20700	12.65961	15.852142	7.607664
4/27/2018 18:00	21600	12.66487	15.896225	7.595674
4/27/2018 18:15	22500	12.665192	15.909241	7.594941
4/27/2018 18:30	23400	12.667235	15.870224	7.590283
4/27/2018 18:45	24300	12.667617	15.887558	7.589414
4/27/2018 19:00	25200	12.665787	15.887558	7.593585
4/27/2018 19:15	26100	12.663472	15.882507	7.59886
4/27/2018 19:30	27000	12.662285	15.889008	7.601567
4/27/2018 19:45	27900	12.659351	15.869492	7.608253
4/27/2018 20:00	28800	12.656395	15.883224	7.614992
4/27/2018 20:15	29700	12.65027	15.893341	7.628951
4/27/2018 20:30	30600	12.645478	15.900574	7.639874
4/27/2018 20:45	31500	12.638302	15.873108	7.656231
4/27/2018 21:00	32400	12.631453	15.889725	7.671843
4/27/2018 21:15	33300	12.624873	15.886124	7.68684
4/27/2018 21:30	34200	12.621037	15.882507	7.695584
4/27/2018 21:45	35100	12.615278	15.871658	7.708709
4/27/2018 22:00	36000	12.6091	15.883942	7.722791
4/27/2018 22:15	36900	12.603156	15.858658	7.73634

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/27/2018 22:30	37800	12.599003	15.891891	7.745806
4/27/2018 22:45	38700	12.593332	15.904907	7.758731
4/27/2018 23:00	39600	12.589369	15.855774	7.767765
4/27/2018 23:15	40500	12.584334	15.869492	7.77924
4/27/2018 23:30	41400	12.581799	15.899826	7.78502
4/27/2018 23:45	42300	12.57599	15.886826	7.79826
4/28/2018 0:00	43200	12.571877	15.891891	7.807633
4/28/2018 0:15	44100	12.566574	15.865891	7.819721
4/28/2018 0:30	45000	12.563497	15.872391	7.826735
4/28/2018 0:45	45900	12.563318	15.894791	7.827142
4/28/2018 1:00	46800	12.561539	15.885376	7.831198
4/28/2018 1:15	47700	12.562238	15.892609	7.829605
4/28/2018 1:30	48600	12.563476	15.881775	7.826784
4/28/2018 1:45	49500	12.566187	15.872391	7.820603
4/28/2018 2:00	50400	12.568006	15.874557	7.816458
4/28/2018 2:15	51300	12.570299	15.879608	7.811231
4/28/2018 2:30	52200	12.57772	15.856476	7.794317
4/28/2018 2:45	53100	12.585287	15.870926	7.777068
4/28/2018 3:00	54000	12.592165	15.877441	7.761392
4/28/2018 3:15	54900	12.599393	15.855774	7.744917
4/28/2018 3:30	55800	12.607851	15.876709	7.725638
4/28/2018 3:45	56700	12.61709	15.885376	7.704579
4/28/2018 4:00	57600	12.626513	15.903458	7.683101
4/28/2018 4:15	58500	12.634564	15.866592	7.66475
4/28/2018 4:30	59400	12.644705	15.890457	7.641637
4/28/2018 4:45	60300	12.653454	15.877441	7.621696
4/28/2018 5:00	61200	12.660069	15.889008	7.606618
4/28/2018 5:15	62100	12.667727	15.888275	7.589163
4/28/2018 5:30	63000	12.669983	15.855042	7.584021
4/28/2018 5:45	63900	12.678855	15.888275	7.563798
4/28/2018 6:00	64800	12.68149	15.881042	7.557792
4/28/2018 6:15	65700	12.68812	15.890457	7.542681
4/28/2018 6:30	66600	12.688844	15.881775	7.541031
4/28/2018 6:45	67500	12.69048	15.868057	7.537301
4/28/2018 7:00	68400	12.692552	15.874557	7.532579
4/28/2018 7:15	69300	12.694489	15.900574	7.528164
4/28/2018 7:30	70200	12.692454	15.885376	7.532801
4/28/2018 7:45	71100	12.692198	15.886826	7.533386
4/28/2018 8:00	72000	12.687963	15.876709	7.543037
4/28/2018 8:15	72900	12.683779	15.886826	7.552576
4/28/2018 8:30	73800	12.679292	15.887558	7.562803
4/28/2018 8:45	74700	12.673862	15.865891	7.575178

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/28/2018 9:00	75600	12.668803	15.875275	7.586709
4/28/2018 9:15	76500	12.661554	15.884674	7.603232
4/28/2018 9:30	77400	12.656178	15.867325	7.615487
4/28/2018 9:45	78300	12.649779	15.880341	7.630071
4/28/2018 10:00	79200	12.643518	15.896957	7.644341
4/28/2018 10:15	80100	12.63537	15.890457	7.662913
4/28/2018 10:30	81000	12.632044	15.903458	7.670496
4/28/2018 10:45	81900	12.628681	15.891891	7.67816
4/28/2018 11:00	82800	12.621753	15.898392	7.693952
4/28/2018 11:15	83700	12.618029	15.899124	7.70244
4/28/2018 11:30	84600	12.613967	15.861542	7.711698
4/28/2018 11:45	85500	12.610378	15.892609	7.719878
4/28/2018 12:00	86400	12.60273	15.872391	7.737311
4/28/2018 12:15	87300	12.600161	15.881042	7.743167
4/28/2018 12:30	88200	12.596219	15.879608	7.752151
4/28/2018 12:45	89100	12.595559	15.885376	7.753655
4/28/2018 13:00	90000	12.592957	15.886826	7.759587
4/28/2018 13:15	90900	12.591658	15.865891	7.762548
4/28/2018 13:30	91800	12.589844	15.899124	7.766682
4/28/2018 13:45	92700	12.592098	15.880341	7.761544
4/28/2018 14:00	93600	12.596546	15.864441	7.751405
4/28/2018 14:15	94500	12.596219	15.897675	7.752151
4/28/2018 14:30	95400	12.598969	15.891159	7.745884
4/28/2018 14:45	96300	12.604323	15.885376	7.733679
4/28/2018 15:00	97200	12.610172	15.867325	7.720347
4/28/2018 15:15	98100	12.614569	15.880341	7.710327
4/28/2018 15:30	99000	12.621078	15.874557	7.695489
4/28/2018 15:45	99900	12.627268	15.886826	7.681381
4/28/2018 16:00	100800	12.635839	15.872391	7.661846
4/28/2018 16:15	101700	12.645748	15.906342	7.639259
4/28/2018 16:30	102600	12.653314	15.883224	7.622015
4/28/2018 16:45	103500	12.662243	15.881042	7.601662
4/28/2018 17:00	104400	12.672835	15.873825	7.577519
4/28/2018 17:15	105300	12.679113	15.857208	7.563209
4/28/2018 17:30	106200	12.686058	15.894791	7.54738
4/28/2018 17:45	107100	12.691821	15.897675	7.534245
4/28/2018 18:00	108000	12.698421	15.870224	7.519202
4/28/2018 18:15	108900	12.701187	15.868057	7.512897
4/28/2018 18:30	109800	12.705252	15.876709	7.503632
4/28/2018 18:45	110700	12.707541	15.886826	7.498413
4/28/2018 19:00	111600	12.705162	15.885376	7.503836
4/28/2018 19:15	112500	12.706086	15.882507	7.50173

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/28/2018 19:30	113400	12.704857	15.878159	7.504532
4/28/2018 19:45	114300	12.702367	15.881042	7.510208
4/28/2018 20:00	115200	12.70208	15.863708	7.510862
4/28/2018 20:15	116100	12.702498	15.876709	7.509908
4/28/2018 20:30	117000	12.701797	15.892609	7.511505
4/28/2018 20:45	117900	12.699113	15.898392	7.517624
4/28/2018 21:00	118800	12.695239	15.872391	7.526454
4/28/2018 21:15	119700	12.688029	15.877441	7.542887
4/28/2018 21:30	120600	12.682119	15.877441	7.556358
4/28/2018 21:45	121500	12.676792	15.889008	7.5685
4/28/2018 22:00	122400	12.666365	15.868774	7.592268
4/28/2018 22:15	123300	12.65506	15.885376	7.618035
4/28/2018 22:30	124200	12.641824	15.891891	7.648204
4/28/2018 22:45	125100	12.633488	15.881042	7.667204
4/28/2018 23:00	126000	12.623673	15.890457	7.689574
4/28/2018 23:15	126900	12.615737	15.876709	7.707664
4/28/2018 23:30	127800	12.608101	15.885376	7.725069
4/28/2018 23:45	128700	12.601727	15.896957	7.739595
4/29/2018 0:00	129600	12.595525	15.906342	7.753734
4/29/2018 0:15	130500	12.587597	15.894791	7.771803
4/29/2018 0:30	131400	12.580521	15.894058	7.787932
4/29/2018 0:45	132300	12.57276	15.888275	7.805622
4/29/2018 1:00	133200	12.567171	15.900574	7.81836
4/29/2018 1:15	134100	12.561773	15.857941	7.830664
4/29/2018 1:30	135000	12.554934	15.872391	7.846253
4/29/2018 1:45	135900	12.548508	15.854324	7.8609
4/29/2018 2:00	136800	12.543976	15.871658	7.87123
4/29/2018 2:15	137700	12.539742	15.868057	7.880878
4/29/2018 2:30	138600	12.539529	15.885376	7.881365
4/29/2018 2:45	139500	12.539056	15.885376	7.882443
4/29/2018 3:00	140400	12.542956	15.889008	7.873553
4/29/2018 3:15	141300	12.545375	15.906342	7.868041
4/29/2018 3:30	142200	12.550366	15.886826	7.856663
4/29/2018 3:45	143100	12.552537	15.876007	7.851716
4/29/2018 4:00	144000	12.55738	15.887558	7.840678
4/29/2018 4:15	144900	12.559505	15.860825	7.835833
4/29/2018 4:30	145800	12.564516	15.841309	7.824412
4/29/2018 4:45	146700	12.56757	15.879608	7.817451
4/29/2018 5:00	147600	12.56894	15.862274	7.814328
4/29/2018 5:15	148500	12.569627	15.883224	7.812763
4/29/2018 5:30	149400	12.567532	15.883942	7.817539
4/29/2018 5:45	150300	12.568852	15.897675	7.814528

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/29/2018 6:00	151200	12.567991	15.884674	7.816491
4/29/2018 6:15	152100	12.5724	15.876709	7.806442
4/29/2018 6:30	153000	12.570656	15.879608	7.810418
4/29/2018 6:45	153900	12.57404	15.870926	7.802703
4/29/2018 7:00	154800	12.572448	15.871658	7.806333
4/29/2018 7:15	155700	12.573067	15.862991	7.804922
4/29/2018 7:30	156600	12.570433	15.896225	7.810926
4/29/2018 7:45	157500	12.565462	15.907059	7.822256
4/29/2018 8:00	158400	12.558422	15.873108	7.838302
4/29/2018 8:15	159300	12.551948	15.883224	7.853059
4/29/2018 8:30	160200	12.549326	15.876007	7.859035
4/29/2018 8:45	161100	12.540074	15.874557	7.880122
4/29/2018 9:00	162000	12.536537	15.900574	7.888185
4/29/2018 9:15	162900	12.530333	15.868057	7.902327
4/29/2018 9:30	163800	12.524336	15.872391	7.915995
4/29/2018 9:45	164700	12.518246	15.879608	7.929876
4/29/2018 10:00	165600	12.511251	15.880341	7.945818
4/29/2018 10:15	166500	12.506597	15.877441	7.956429
4/29/2018 10:30	167400	12.502269	15.886124	7.966293
4/29/2018 10:45	168300	12.497038	15.876007	7.978216
4/29/2018 11:00	169200	12.487727	15.886826	7.999437
4/29/2018 11:15	170100	12.479232	15.875275	8.018801
4/29/2018 11:30	171000	12.473821	15.852875	8.031135
4/29/2018 11:45	171900	12.467308	15.868774	8.045979
4/29/2018 12:00	172800	12.458141	15.860107	8.066873
4/29/2018 12:15	173700	12.450336	15.879608	8.084664
4/29/2018 12:30	174600	12.445262	15.889008	8.096229
4/29/2018 12:45	175500	12.436736	15.891159	8.115662
4/29/2018 13:00	176400	12.433785	15.894058	8.122387
4/29/2018 13:15	177300	12.427765	15.872391	8.13611
4/29/2018 13:30	178200	12.42318	15.869492	8.146562
4/29/2018 13:45	179100	12.417233	15.883942	8.160116
4/29/2018 14:00	180000	12.413554	15.878159	8.168501
4/29/2018 14:15	180900	12.408205	15.886826	8.180693
4/29/2018 14:30	181800	12.406851	15.875275	8.18378
4/29/2018 14:45	182700	12.402569	15.886124	8.19354
4/29/2018 15:00	183600	12.399588	15.868057	8.200335
4/29/2018 15:15	184500	12.395426	15.884674	8.209821
4/29/2018 15:30	185400	12.390385	15.870224	8.221311
4/29/2018 15:45	186300	12.390643	15.873108	8.220722
4/29/2018 16:00	187200	12.390858	15.872391	8.220233
4/29/2018 16:15	188100	12.390261	15.865891	8.221594

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/29/2018 16:30	189000	12.393849	15.862991	8.213414
4/29/2018 16:45	189900	12.397074	15.862991	8.206064
4/29/2018 17:00	190800	12.401037	15.883224	8.197031
4/29/2018 17:15	191700	12.404653	15.852875	8.18879
4/29/2018 17:30	192600	12.409973	15.875275	8.176662
4/29/2018 17:45	193500	12.41081	15.875275	8.174757
4/29/2018 18:00	194400	12.411184	15.890457	8.173903
4/29/2018 18:15	195300	12.413641	15.876709	8.168303
4/29/2018 18:30	196200	12.418139	15.890457	8.15805
4/29/2018 18:45	197100	12.418248	15.876709	8.157802
4/29/2018 19:00	198000	12.415473	15.863708	8.164127
4/29/2018 19:15	198900	12.419491	15.896225	8.154969
4/29/2018 19:30	199800	12.41971	15.900574	8.154469
4/29/2018 19:45	200700	12.418858	15.880341	8.156412
4/29/2018 20:00	201600	12.419987	15.870926	8.153839
4/29/2018 20:15	202500	12.418421	15.870224	8.157408
4/29/2018 20:30	203400	12.416485	15.892609	8.16182
4/29/2018 20:45	204300	12.412757	15.889725	8.170318
4/29/2018 21:00	205200	12.411546	15.883224	8.173079
4/29/2018 21:15	206100	12.408754	15.865158	8.17944
4/29/2018 21:30	207000	12.402479	15.854324	8.193744
4/29/2018 21:45	207900	12.400053	15.870224	8.199274
4/29/2018 22:00	208800	12.393967	15.868774	8.213146
4/29/2018 22:15	209700	12.391113	15.886826	8.21965
4/29/2018 22:30	210600	12.389372	15.862274	8.223619
4/29/2018 22:45	211500	12.384262	15.868774	8.235267
4/29/2018 23:00	212400	12.382036	15.869492	8.24034
4/29/2018 23:15	213300	12.381492	15.885376	8.241581
4/29/2018 23:30	214200	12.379125	15.891159	8.246976
4/29/2018 23:45	215100	12.37646	15.870224	8.25305
4/30/2018 0:00	216000	12.373439	15.869492	8.259935
4/30/2018 0:15	216900	12.371058	15.883224	8.265364
4/30/2018 0:30	217800	12.367773	15.876709	8.27285
4/30/2018 0:45	218700	12.364182	15.872391	8.281036
4/30/2018 1:00	219600	12.359135	15.855774	8.29254
4/30/2018 1:15	220500	12.358854	15.869492	8.293179
4/30/2018 1:30	221400	12.358041	15.873825	8.295033
4/30/2018 1:45	222300	12.355721	15.903458	8.300322
4/30/2018 2:00	223200	12.358294	15.886826	8.294455
4/30/2018 2:15	224100	12.359908	15.870926	8.290776
4/30/2018 2:30	225000	12.361588	15.886826	8.286948
4/30/2018 2:45	225900	12.364846	15.878159	8.279521

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/30/2018 3:00	226800	12.369076	15.857208	8.26988
4/30/2018 3:15	227700	12.371473	15.879608	8.264416
4/30/2018 3:30	228600	12.376546	15.881775	8.252853
4/30/2018 3:45	229500	12.379889	15.888275	8.245235
4/30/2018 4:00	230400	12.382696	15.866592	8.238835
4/30/2018 4:15	231300	12.38798	15.880341	8.226791
4/30/2018 4:30	232200	12.392859	15.874557	8.215672
4/30/2018 4:45	233100	12.3977	15.881042	8.204637
4/30/2018 5:00	234000	12.401791	15.875275	8.195313
4/30/2018 5:15	234900	12.409115	15.881775	8.178619
4/30/2018 5:30	235800	12.414958	15.878891	8.1653
4/30/2018 5:45	236700	12.422062	15.891159	8.149109
4/30/2018 6:00	237600	12.429368	15.860825	8.132456
4/30/2018 6:15	238500	12.438728	15.872391	8.111121
4/30/2018 6:30	239400	12.44638	15.883224	8.093681
4/30/2018 6:45	240300	12.452642	15.894791	8.079407
4/30/2018 7:00	241200	12.458391	15.906342	8.066303
4/30/2018 7:15	242100	12.465974	15.856476	8.04902
4/30/2018 7:30	243000	12.469478	15.873108	8.041034
4/30/2018 7:45	243900	12.472587	15.866592	8.033947
4/30/2018 8:00	244800	12.477492	15.879608	8.022766
4/30/2018 8:15	245700	12.478329	15.865891	8.02086
4/30/2018 8:30	246600	12.482189	15.868774	8.01206
4/30/2018 8:45	247500	12.480523	15.870926	8.015858
4/30/2018 9:00	248400	12.481615	15.891159	8.013369
4/30/2018 9:15	249300	12.487694	15.884674	7.999514
4/30/2018 9:30	250200	12.485868	15.866592	8.003675
4/30/2018 9:45	251100	12.36051	15.898392	8.289405
4/30/2018 10:00	252000	11.718104	15.860107	9.753645
4/30/2018 10:15	252900	11.691845	15.851425	9.813498
4/30/2018 10:30	253800	11.68854	15.874557	9.821033
4/30/2018 10:45	254700	11.680692	15.875275	9.838921
4/30/2018 11:00	255600	11.67616	15.856476	9.84925
4/30/2018 11:15	256500	11.667303	15.868774	9.869437
4/30/2018 11:30	257400	11.666317	15.870224	9.871685
4/30/2018 11:45	258300	11.663624	15.887558	9.877823
4/30/2018 12:00	259200	11.656329	15.882507	9.89445
4/30/2018 12:15	260100	11.656526	15.892609	9.894002
4/30/2018 12:30	261000	11.657509	15.894791	9.891762
4/30/2018 12:45	261900	11.650489	15.882507	9.907762
4/30/2018 13:00	262800	11.645719	15.902725	9.918634
4/30/2018 13:15	263700	11.640693	15.863708	9.93009

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
4/30/2018 13:30	264600	11.642957	15.869492	9.92493
4/30/2018 13:45	265500	11.650898	15.871658	9.90683
4/30/2018 14:00	266400	11.659679	15.884674	9.886814
4/30/2018 14:15	267300	11.639855	15.884674	9.931999
4/30/2018 14:30	268200	11.642566	15.868774	9.925821
4/30/2018 14:45	269100	11.645374	15.878891	9.919419
4/30/2018 15:00	270000	11.639855	15.873108	9.931999
4/30/2018 15:15	270900	11.647655	15.878159	9.914222
4/30/2018 15:30	271800	11.638275	15.891159	9.9356
4/30/2018 15:45	272700	11.637421	15.878891	9.937548
4/30/2018 16:00	273600	11.640507	15.903458	9.930514
4/30/2018 16:15	274500	11.638042	15.890457	9.936131
4/30/2018 16:30	275400	11.648434	15.878891	9.912446
4/30/2018 16:45	276300	11.643715	15.870224	9.923202
4/30/2018 17:00	277200	11.650353	15.856476	9.908071
4/30/2018 17:15	278100	11.655051	15.857941	9.897363
4/30/2018 17:30	279000	11.650117	15.882507	9.908609
4/30/2018 17:45	279900	11.651469	15.880341	9.905527
4/30/2018 18:00	280800	11.656412	15.865158	9.89426
4/30/2018 18:15	281700	11.652482	15.873108	9.903219
4/30/2018 18:30	282600	11.655442	15.883224	9.896471
4/30/2018 18:45	283500	11.651365	15.873108	9.905764
4/30/2018 19:00	284400	11.659052	15.889008	9.888245
4/30/2018 19:15	285300	11.658646	15.849258	9.88917
4/30/2018 19:30	286200	11.665185	15.884674	9.874265
4/30/2018 19:45	287100	11.662249	15.851425	9.880958
4/30/2018 20:00	288000	11.666073	15.876007	9.872241
4/30/2018 20:15	288900	11.652952	15.862991	9.902147
4/30/2018 20:30	289800	11.658208	15.868774	9.890168
4/30/2018 20:45	290700	11.658484	15.865891	9.889538
4/30/2018 21:00	291600	11.664595	15.876709	9.87561
4/30/2018 21:15	292500	11.670484	15.865158	9.862187
4/30/2018 21:30	293400	11.659531	15.864441	9.887153
4/30/2018 21:45	294300	11.663129	15.845657	9.878952
4/30/2018 22:00	295200	11.664198	15.881042	9.876514
4/30/2018 22:15	296100	11.660673	15.884674	9.884548
4/30/2018 22:30	297000	11.658042	15.862991	9.890546
4/30/2018 22:45	297900	11.656045	15.871658	9.895098
4/30/2018 23:00	298800	11.643142	15.878891	9.924508
4/30/2018 23:15	299700	11.65687	15.886826	9.893217
4/30/2018 23:30	300600	11.64811	15.865891	9.913183
4/30/2018 23:45	301500	11.647243	15.894058	9.915159

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/1/2018 0:00	302400	11.650103	15.874557	9.908642
5/1/2018 0:15	303300	11.646274	15.878159	9.91737
5/1/2018 0:30	304200	11.645276	15.865891	9.919643
5/1/2018 0:45	305100	11.649277	15.855042	9.910524
5/1/2018 1:00	306000	11.644831	15.869492	9.920658
5/1/2018 1:15	306900	11.641368	15.884674	9.928551
5/1/2018 1:30	307800	11.638703	15.878891	9.934625
5/1/2018 1:45	308700	11.655685	15.890457	9.895918
5/1/2018 2:00	309600	11.636512	15.884674	9.93962
5/1/2018 2:15	310500	11.640334	15.860107	9.930908
5/1/2018 2:30	311400	11.637425	15.884674	9.937537
5/1/2018 2:45	312300	11.641033	15.891891	9.929314
5/1/2018 3:00	313200	11.635097	15.891159	9.942845
5/1/2018 3:15	314100	11.631471	15.886826	9.95111
5/1/2018 3:30	315000	11.64486	15.872391	9.920591
5/1/2018 3:45	315900	11.6341	15.860825	9.945118
5/1/2018 4:00	316800	11.6403	15.887558	9.930986
5/1/2018 4:15	317700	11.640437	15.876709	9.930673
5/1/2018 4:30	318600	11.64444	15.868774	9.92155
5/1/2018 4:45	319500	11.644252	15.834091	9.921978
5/1/2018 5:00	320400	11.647962	15.879608	9.913523
5/1/2018 5:15	321300	11.644509	15.891159	9.921391
5/1/2018 5:30	322200	11.656339	15.879608	9.894428
5/1/2018 5:45	323100	11.654852	15.865891	9.897818
5/1/2018 6:00	324000	11.663128	15.869492	9.878954
5/1/2018 6:15	324900	11.656919	15.865891	9.893106
5/1/2018 6:30	325800	11.664124	15.867325	9.876682
5/1/2018 6:45	326700	11.667141	15.896225	9.869806
5/1/2018 7:00	327600	11.677231	15.867325	9.846808
5/1/2018 7:15	328500	11.661461	15.889725	9.882753
5/1/2018 7:30	329400	11.668779	15.860825	9.866072
5/1/2018 7:45	330300	11.665998	15.876709	9.872411
5/1/2018 8:00	331200	11.675688	15.883942	9.850326
5/1/2018 8:15	332100	11.678868	15.872391	9.843077
5/1/2018 8:30	333000	11.665831	15.877441	9.872793
5/1/2018 8:45	333900	11.673477	15.876709	9.855364
5/1/2018 9:00	334800	11.665739	15.872391	9.873002
5/1/2018 9:15	335700	11.684028	15.880341	9.831316
5/1/2018 9:30	336600	11.672316	15.887558	9.858012
5/1/2018 9:45	337500	11.672107	15.894058	9.858488
5/1/2018 10:00	338400	11.667278	15.858658	9.869493
5/1/2018 10:15	339300	11.661832	15.894791	9.881907

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/1/2018 10:30	340200	11.673424	15.862274	9.855486
5/1/2018 10:45	341100	11.669052	15.872391	9.86545
5/1/2018 11:00	342000	11.671246	15.869492	9.860451
5/1/2018 11:15	342900	11.64227	15.871658	9.926495
5/1/2018 11:30	343800	11.662957	15.886826	9.879343
5/1/2018 11:45	344700	11.661884	15.862991	9.881788
5/1/2018 12:00	345600	11.657757	15.848541	9.891195
5/1/2018 12:15	346500	11.654661	15.884674	9.898252
5/1/2018 12:30	347400	11.652239	15.878159	9.903773
5/1/2018 12:45	348300	11.650192	15.882507	9.908438
5/1/2018 13:00	349200	11.652013	15.881042	9.904288
5/1/2018 13:15	350100	11.654153	15.861542	9.89941
5/1/2018 13:30	351000	11.655093	15.894058	9.897267
5/1/2018 13:45	351900	11.655971	15.900574	9.895267
5/1/2018 14:00	352800	11.646675	15.862991	9.916454
5/1/2018 14:15	353700	11.6462	15.881775	9.917538
5/1/2018 14:30	354600	11.649576	15.854324	9.909842
5/1/2018 14:45	355500	11.652362	15.865891	9.903493
5/1/2018 15:00	356400	11.643339	15.867325	9.924058
5/1/2018 15:15	357300	11.64391	15.856476	9.922756
5/1/2018 15:30	358200	11.650453	15.874557	9.907845
5/1/2018 15:45	359100	11.647127	15.887558	9.915424
5/1/2018 16:00	360000	11.639929	15.873108	9.931831
5/1/2018 16:15	360900	11.635933	15.856476	9.940939
5/1/2018 16:30	361800	11.63529	15.873108	9.942405
5/1/2018 16:45	362700	11.639812	15.860107	9.932096
5/1/2018 17:00	363600	11.647592	15.847092	9.914366
5/1/2018 17:15	364500	11.646482	15.862991	9.916894
5/1/2018 17:30	365400	11.644449	15.868774	9.921528
5/1/2018 17:45	366300	11.641581	15.877441	9.928066
5/1/2018 18:00	367200	11.648287	15.865158	9.912781
5/1/2018 18:15	368100	11.642378	15.879608	9.92625
5/1/2018 18:30	369000	11.639855	15.863708	9.931999
5/1/2018 18:45	369900	11.643919	15.873825	9.922737
5/1/2018 19:00	370800	11.645656	15.876709	9.918778
5/1/2018 19:15	371700	11.647318	15.858658	9.914989
5/1/2018 19:30	372600	11.653954	15.873108	9.899864
5/1/2018 19:45	373500	11.656282	15.873825	9.894556
5/1/2018 20:00	374400	11.648715	15.887558	9.911805
5/1/2018 20:15	375300	11.660492	15.883942	9.884962
5/1/2018 20:30	376200	11.659768	15.893341	9.886612
5/1/2018 20:45	377100	11.661561	15.875275	9.882524

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/1/2018 21:00	378000	11.670048	15.868774	9.863181
5/1/2018 21:15	378900	11.664102	15.852142	9.876734
5/1/2018 21:30	379800	11.659244	15.862274	9.887807
5/1/2018 21:45	380700	11.665421	15.860825	9.873728
5/1/2018 22:00	381600	11.674572	15.858658	9.852869
5/1/2018 22:15	382500	11.661043	15.868774	9.883705
5/1/2018 22:30	383400	11.655502	15.857208	9.896335
5/1/2018 22:45	384300	11.661969	15.886826	9.881595
5/1/2018 23:00	385200	11.66909	15.870224	9.865364
5/1/2018 23:15	386100	11.659715	15.868057	9.886733
5/1/2018 23:30	387000	11.662462	15.888275	9.880471
5/1/2018 23:45	387900	11.659768	15.876709	9.886612
5/2/2018 0:00	388800	11.654898	15.890457	9.897713
5/2/2018 0:15	389700	11.659372	15.869492	9.887514
5/2/2018 0:30	390600	11.656418	15.904175	9.894248
5/2/2018 0:45	391500	11.658177	15.878891	9.890238
5/2/2018 1:00	392400	11.643919	15.864441	9.922737
5/2/2018 1:15	393300	11.649851	15.894058	9.909216
5/2/2018 1:30	394200	11.655838	15.873825	9.895569
5/2/2018 1:45	395100	11.648087	15.895493	9.913238
5/2/2018 2:00	396000	11.648553	15.868774	9.912174
5/2/2018 2:15	396900	11.646816	15.860825	9.916133
5/2/2018 2:30	397800	11.647787	15.886826	9.913919
5/2/2018 2:45	398700	11.645671	15.884674	9.918743
5/2/2018 3:00	399600	11.643022	15.888275	9.924782
5/2/2018 3:15	400500	11.64456	15.855774	9.921276
5/2/2018 3:30	401400	11.65114	15.862991	9.906277
5/2/2018 3:45	402300	11.647446	15.861542	9.914698
5/2/2018 4:00	403200	11.643414	15.867325	9.923889
5/2/2018 4:15	404100	11.644613	15.877441	9.921154
5/2/2018 4:30	405000	11.645263	15.886124	9.919674
5/2/2018 4:45	405900	11.651118	15.852875	9.906327
5/2/2018 5:00	406800	11.653419	15.855042	9.901084
5/2/2018 5:15	407700	11.656412	15.863708	9.89426
5/2/2018 5:30	408600	11.652646	15.873108	9.902845
5/2/2018 5:45	409500	11.655051	15.857941	9.897363
5/2/2018 6:00	410400	11.662831	15.874557	9.879629
5/2/2018 6:15	411300	11.659405	15.864441	9.88744
5/2/2018 6:30	412200	11.666818	15.870224	9.870543
5/2/2018 6:45	413100	11.679523	15.862991	9.841585
5/2/2018 7:00	414000	11.669364	15.884674	9.864739
5/2/2018 7:15	414900	11.675153	15.882507	9.851545

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/2/2018 7:30	415800	11.670692	15.868774	9.861712
5/2/2018 7:45	416700	11.676826	15.883224	9.847731
5/2/2018 8:00	417600	11.676652	15.855042	9.848128
5/2/2018 8:15	418500	11.674384	15.879608	9.853297
5/2/2018 8:30	419400	11.672405	15.885376	9.857807
5/2/2018 8:45	420300	11.677651	15.890457	9.84585
5/2/2018 9:00	421200	11.676884	15.873108	9.8476
5/2/2018 9:15	422100	11.685238	15.886826	9.828558
5/2/2018 9:30	423000	11.693968	15.870926	9.80866
5/2/2018 9:45	423900	11.68665	15.864441	9.825338
5/2/2018 10:00	424800	11.679214	15.868774	9.84229
5/2/2018 10:15	425700	11.680826	15.882507	9.838614
5/2/2018 10:30	426600	11.685498	15.866592	9.827965
5/2/2018 10:45	427500	11.676971	15.852875	9.8474
5/2/2018 11:00	428400	11.686235	15.882507	9.826284
5/2/2018 11:15	429300	11.679671	15.883942	9.841246
5/2/2018 11:30	430200	11.666254	15.868774	9.871828
5/2/2018 11:45	431100	11.683425	15.878891	9.83269
5/2/2018 12:00	432000	11.677231	15.865158	9.846808
5/2/2018 12:15	432900	11.670944	15.865891	9.861137
5/2/2018 12:30	433800	11.670842	15.857208	9.86137
5/2/2018 12:45	434700	11.666825	15.893341	9.870526
5/2/2018 13:00	435600	11.669127	15.893341	9.865278
5/2/2018 13:15	436500	11.668403	15.880341	9.866931
5/2/2018 13:30	437400	11.663939	15.886124	9.877106
5/2/2018 13:45	438300	11.662459	15.853592	9.880477
5/2/2018 14:00	439200	11.670707	15.865158	9.861679
5/2/2018 14:15	440100	11.661684	15.865891	9.882244
5/2/2018 14:30	441000	11.658929	15.882507	9.888525
5/2/2018 14:45	441900	11.661017	15.868057	9.883764
5/2/2018 15:00	442800	11.659997	15.883942	9.88609
5/2/2018 15:15	443700	11.658929	15.868057	9.888525
5/2/2018 15:30	444600	11.656181	15.876007	9.894787
5/2/2018 15:45	445500	11.652991	15.878891	9.902058
5/2/2018 16:00	446400	11.655169	15.868057	9.897096
5/2/2018 16:15	447300	11.651562	15.881775	9.905316
5/2/2018 16:30	448200	11.650919	15.889008	9.906781
5/2/2018 16:45	449100	11.658028	15.854324	9.890578
5/2/2018 17:00	450000	11.652803	15.871658	9.902487
5/2/2018 17:15	450900	11.651118	15.873825	9.906327
5/2/2018 17:30	451800	11.650721	15.896957	9.907234
5/2/2018 17:45	452700	11.648553	15.836975	9.912174

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/2/2018 18:00	453600	11.653332	15.884674	9.901282
5/2/2018 18:15	454500	11.654555	15.848541	9.898493
5/2/2018 18:30	455400	11.66078	15.876007	9.884305
5/2/2018 18:45	456300	11.660523	15.882507	9.88489
5/2/2018 19:00	457200	11.654675	15.868057	9.898221
5/2/2018 19:15	458100	11.662353	15.870224	9.88072
5/2/2018 19:30	459000	11.652991	15.878891	9.902058
5/2/2018 19:45	459900	11.655242	15.873108	9.896928
5/2/2018 20:00	460800	11.661258	15.857208	9.883216
5/2/2018 20:15	461700	11.662712	15.842041	9.879902
5/2/2018 20:30	462600	11.667242	15.876007	9.869576
5/2/2018 20:45	463500	11.665545	15.869492	9.873446
5/2/2018 21:00	464400	11.659035	15.873108	9.888283
5/2/2018 21:15	465300	11.673472	15.856476	9.855375
5/2/2018 21:30	466200	11.673056	15.858658	9.856325
5/2/2018 21:45	467100	11.666073	15.859375	9.872241
5/2/2018 22:00	468000	11.66659	15.884674	9.871063
5/2/2018 22:15	468900	11.663126	15.866592	9.878958
5/2/2018 22:30	469800	11.670113	15.894058	9.863033
5/2/2018 22:45	470700	11.665346	15.871658	9.873898
5/2/2018 23:00	471600	11.674766	15.864441	9.852427
5/2/2018 23:15	472500	11.66696	15.863708	9.87022
5/2/2018 23:30	473400	11.670582	15.865158	9.861963
5/2/2018 23:45	474300	11.662906	15.872391	9.87946
5/3/2018 0:00	475200	11.660825	15.868057	9.884203
5/3/2018 0:15	476100	11.660662	15.861542	9.884575
5/3/2018 0:30	477000	11.661503	15.859375	9.882658
5/3/2018 0:45	477900	11.659849	15.855774	9.886427
5/3/2018 1:00	478800	11.660087	15.859375	9.885885
5/3/2018 1:15	479700	11.65989	15.865891	9.886333
5/3/2018 1:30	480600	11.652386	15.868774	9.903439
5/3/2018 1:45	481500	11.66084	15.877441	9.884169
5/3/2018 2:00	482400	11.654661	15.857208	9.898252
5/3/2018 2:15	483300	11.650686	15.873108	9.907312
5/3/2018 2:30	484200	11.64454	15.839874	9.921322
5/3/2018 2:45	485100	11.650613	15.871658	9.907479
5/3/2018 3:00	486000	11.643887	15.872391	9.922811
5/3/2018 3:15	486900	11.639077	15.857941	9.933773
5/3/2018 3:30	487800	11.641479	15.862991	9.928299
5/3/2018 3:45	488700	11.645212	15.855774	9.919789
5/3/2018 4:00	489600	11.645114	15.874557	9.920012
5/3/2018 4:15	490500	11.642219	15.870926	9.926613

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/3/2018 4:30	491400	11.645533	15.870224	9.919059
5/3/2018 4:45	492300	11.650378	15.865158	9.908014
5/3/2018 5:00	493200	11.642739	15.871658	9.925426
5/3/2018 5:15	494100	11.648553	15.880341	9.912174
5/3/2018 5:30	495000	11.641798	15.880341	9.927571
5/3/2018 5:45	495900	11.654102	15.867325	9.899526
5/3/2018 6:00	496800	11.649441	15.856476	9.910151
5/3/2018 6:15	497700	11.654292	15.860825	9.899094
5/3/2018 6:30	498600	11.651636	15.855042	9.905147
5/3/2018 6:45	499500	11.658447	15.881042	9.889622
5/3/2018 7:00	500400	11.646504	15.863708	9.916843
5/3/2018 7:15	501300	11.668995	15.873825	9.865581
5/3/2018 7:30	502200	11.666699	15.870224	9.870813
5/3/2018 7:45	503100	11.65484	15.893341	9.897843
5/3/2018 8:00	504000	11.657487	15.880341	9.891811
5/3/2018 8:15	504900	11.658326	15.870224	9.889898
5/3/2018 8:30	505800	11.673671	15.907791	9.854923
5/3/2018 8:45	506700	11.670948	15.876007	9.861129
5/3/2018 9:00	507600	11.668723	15.871658	9.8662
5/3/2018 9:15	508500	11.678576	15.863708	9.843741
5/3/2018 9:30	509400	11.673534	15.857941	9.855234
5/3/2018 9:45	510300	11.672537	15.872391	9.857508
5/3/2018 10:00	511200	11.677205	15.855042	9.846868
5/3/2018 10:15	512100	11.718532	15.873108	9.752671
5/3/2018 10:30	513000	11.684051	15.868774	9.831264
5/3/2018 10:45	513900	11.679473	15.894791	9.841698
5/3/2018 11:00	514800	11.676477	15.878159	9.848526
5/3/2018 11:15	515700	11.676884	15.874557	9.8476
5/3/2018 11:30	516600	11.670582	15.855042	9.861963
5/3/2018 11:45	517500	11.684519	15.878159	9.830197
5/3/2018 12:00	518400	11.664239	15.886124	9.876421
5/3/2018 12:15	519300	11.678193	15.862991	9.844615
5/3/2018 12:30	520200	11.676383	15.895493	9.848742
5/3/2018 12:45	521100	11.668202	15.878891	9.867387
5/3/2018 13:00	522000	11.672352	15.873108	9.857929
5/3/2018 13:15	522900	11.669215	15.845657	9.865079
5/3/2018 13:30	523800	11.664974	15.863708	9.874745
5/3/2018 13:45	524700	11.662472	15.860107	9.880449
5/3/2018 14:00	525600	11.658028	15.858658	9.890578
5/3/2018 14:15	526500	11.663105	15.859375	9.879005
5/3/2018 14:30	527400	11.661884	15.873108	9.881788
5/3/2018 14:45	528300	11.659753	15.860107	9.886646

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/3/2018 15:00	529200	11.653657	15.870926	9.900541
5/3/2018 15:15	530100	11.666774	15.878159	9.870644
5/3/2018 15:30	531000	11.665347	15.853592	9.873896
5/3/2018 15:45	531900	11.659842	15.870224	9.886442
5/3/2018 16:00	532800	11.659867	15.869492	9.886386
5/3/2018 16:15	533700	11.663156	15.873108	9.878891
5/3/2018 16:30	534600	11.647518	15.852142	9.914533
5/3/2018 16:45	535500	11.653493	15.866592	9.900915
5/3/2018 17:00	536400	11.641251	15.855042	9.928819
5/3/2018 17:15	537300	11.647026	15.869492	9.915655
5/3/2018 17:30	538200	11.649156	15.868774	9.910801
5/3/2018 17:45	539100	11.645237	15.888275	9.919732
5/3/2018 18:00	540000	11.660053	15.872391	9.885962
5/3/2018 18:15	540900	11.640071	15.850708	9.931507
5/3/2018 18:30	541800	11.653827	15.831924	9.900154
5/3/2018 18:45	542700	11.64409	15.882507	9.922348
5/3/2018 19:00	543600	11.652581	15.845657	9.902992
5/3/2018 19:15	544500	11.64488	15.852142	9.920546
5/3/2018 19:30	545400	11.651711	15.852142	9.904978
5/3/2018 19:45	546300	11.640495	15.858658	9.93054
5/3/2018 20:00	547200	11.643215	15.874557	9.924341
5/3/2018 20:15	548100	11.646552	15.857208	9.916735
5/3/2018 20:30	549000	11.655467	15.878159	9.896415
5/3/2018 20:45	549900	11.662712	15.870224	9.879902
5/3/2018 21:00	550800	11.655316	15.867325	9.896758
5/3/2018 21:15	551700	11.649685	15.872391	9.909594
5/3/2018 21:30	552600	11.655354	15.835526	9.896671
5/3/2018 21:45	553500	11.658146	15.870926	9.890309
5/3/2018 22:00	554400	11.659257	15.843475	9.887776
5/3/2018 22:15	555300	11.653753	15.877441	9.900321
5/3/2018 22:30	556200	11.653728	15.882507	9.900377
5/3/2018 22:45	557100	11.652769	15.869492	9.902565
5/3/2018 23:00	558000	11.663976	15.857941	9.877021
5/3/2018 23:15	558900	11.656797	15.869492	9.893383
5/3/2018 23:30	559800	11.658534	15.877441	9.889424
5/3/2018 23:45	560700	11.659221	15.881042	9.887859
5/4/2018 0:00	561600	11.66045	15.870926	9.885057
5/4/2018 0:15	562500	11.650453	15.868057	9.907845
5/4/2018 0:30	563400	11.644103	15.871658	9.922318
5/4/2018 0:45	564300	11.64677	15.871658	9.916237
5/4/2018 1:00	565200	11.649058	15.880341	9.911022
5/4/2018 1:15	566100	11.633975	15.873825	9.945402

2090ER				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/4/2018 1:30	567000	11.643318	15.874557	9.924107
5/4/2018 1:45	567900	11.641531	15.875275	9.92818
5/4/2018 2:00	568800	11.642662	15.863708	9.925602
5/4/2018 2:15	569700	11.639372	15.865891	9.933101
5/4/2018 2:30	570600	11.645642	15.873108	9.918809
5/4/2018 2:45	571500	11.631674	15.862274	9.950647
5/4/2018 3:00	572400	11.634689	15.855042	9.943774
5/4/2018 3:15	573300	11.628893	15.885376	9.956985
5/4/2018 3:30	574200	11.638839	15.847092	9.934316
5/4/2018 3:45	575100	11.62946	15.855774	9.955692
5/4/2018 4:00	576000	11.638705	15.845657	9.93462
5/4/2018 4:15	576900	11.631453	15.875275	9.951151
5/4/2018 4:30	577800	11.621749	15.886124	9.973269
5/4/2018 4:45	578700	11.630708	15.857941	9.952849
5/4/2018 5:00	579600	11.634048	15.850708	9.945234
5/4/2018 5:15	580500	11.631002	15.848541	9.952177
5/4/2018 5:30	581400	11.635637	15.839874	9.941613
5/4/2018 5:45	582300	11.636183	15.857941	9.94037
5/4/2018 6:00	583200	11.628842	15.863708	9.957101
5/4/2018 6:15	584100	11.637264	15.868057	9.937904
5/4/2018 6:30	585000	11.631644	15.862274	9.950714
5/4/2018 6:45	585900	11.628415	15.858658	9.958075
5/4/2018 7:00	586800	12.096141	15.883942	8.891983
5/4/2018 7:15	587700	12.205347	15.842758	8.643069
5/4/2018 7:30	588600	12.255141	15.879608	8.529572
5/4/2018 7:45	589500	12.297065	15.852142	8.434016

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/27/2018 12:00	0	11.465067	15.590744	10.522492
4/27/2018 12:15	900	11.450756	15.621994	10.555111
4/27/2018 12:30	1800	11.45612	15.614716	10.542887
4/27/2018 12:45	2700	11.452099	15.563858	10.552051
4/27/2018 13:00	3600	11.459259	15.546417	10.53573
4/27/2018 13:15	4500	11.455227	15.510086	10.544921
4/27/2018 13:30	5400	11.447163	15.521713	10.563302
4/27/2018 13:45	6300	11.443134	15.528976	10.572484
4/27/2018 14:00	7200	11.461494	15.531891	10.530635
4/27/2018 14:15	8100	11.469549	15.528244	10.512276
4/27/2018 14:30	9000	11.475788	15.511536	10.498055
4/27/2018 14:45	9900	11.482956	15.527527	10.481718
4/27/2018 15:00	10800	11.500853	15.547867	10.440926
4/27/2018 15:15	11700	11.500847	15.547867	10.440939
4/27/2018 15:30	12600	11.509819	15.542068	10.420488
4/27/2018 15:45	13500	11.508018	15.552231	10.424593
4/27/2018 16:00	14400	11.541544	15.54425	10.348178
4/27/2018 16:15	15300	11.541544	15.551498	10.348178
4/27/2018 16:30	16200	11.539759	15.56459	10.352247
4/27/2018 16:45	17100	11.553186	15.556595	10.321641
4/27/2018 17:00	18000	11.541994	15.542786	10.347152
4/27/2018 17:15	18900	11.551859	15.56604	10.324667
4/27/2018 17:30	19800	11.550066	15.582031	10.328753
4/27/2018 17:45	20700	11.562578	15.592926	10.300234
4/27/2018 18:00	21600	11.585382	15.561676	10.248257
4/27/2018 18:15	22500	11.578234	15.559494	10.26455
4/27/2018 18:30	23400	11.564367	15.594391	10.296156
4/27/2018 18:45	24300	11.574207	15.58493	10.273727
4/27/2018 19:00	25200	11.569744	15.576218	10.283901
4/27/2018 19:15	26100	11.571543	15.562393	10.279801
4/27/2018 19:30	27000	11.565718	15.554413	10.293078
4/27/2018 19:45	27900	11.560791	15.563858	10.304308
4/27/2018 20:00	28800	11.570633	15.571854	10.281875
4/27/2018 20:15	29700	11.546925	15.5457	10.335914
4/27/2018 20:30	30600	11.540649	15.544968	10.350217
4/27/2018 20:45	31500	11.529497	15.563141	10.375636
4/27/2018 21:00	32400	11.513821	15.560226	10.411367
4/27/2018 21:15	33300	11.515615	15.556595	10.407277
4/27/2018 21:30	34200	11.498167	15.548599	10.447047
4/27/2018 21:45	35100	11.493265	15.560226	10.45822
4/27/2018 22:00	36000	11.501293	15.55368	10.439921
4/27/2018 22:15	36900	11.494604	15.56459	10.455168

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/27/2018 22:30	37800	11.483421	15.562393	10.480657
4/27/2018 22:45	38700	11.485199	15.576218	10.476605
4/27/2018 23:00	39600	11.47267	15.585663	10.505163
4/27/2018 23:15	40500	11.456123	15.563858	10.542877
4/27/2018 23:30	41400	11.463305	15.556595	10.526509
4/27/2018 23:45	42300	11.45612	15.557312	10.542887
4/28/2018 0:00	43200	11.439548	15.556595	10.580657
4/28/2018 0:15	44100	11.437786	15.555862	10.584674
4/28/2018 0:30	45000	11.449879	15.563858	10.557111
4/28/2018 0:45	45900	11.437786	15.577652	10.584674
4/28/2018 1:00	46800	11.45612	15.53334	10.542887
4/28/2018 1:15	47700	11.437342	15.560944	10.585687
4/28/2018 1:30	48600	11.445377	15.56749	10.567371
4/28/2018 1:45	49500	11.440901	15.56604	10.577575
4/28/2018 2:00	50400	11.447628	15.568207	10.562241
4/28/2018 2:15	51300	11.457008	15.566757	10.54086
4/28/2018 2:30	52200	11.463305	15.560944	10.526509
4/28/2018 2:45	53100	11.478033	15.568207	10.492939
4/28/2018 3:00	54000	11.472673	15.570389	10.505155
4/28/2018 3:15	54900	11.495478	15.585663	10.453176
4/28/2018 3:30	55800	11.515617	15.58493	10.407272
4/28/2018 3:45	56700	11.529928	15.570389	10.374654
4/28/2018 4:00	57600	11.531729	15.568207	10.370549
4/28/2018 4:15	58500	11.545561	15.578384	10.339022
4/28/2018 4:30	59400	11.549627	15.565308	10.329753
4/28/2018 4:45	60300	11.548706	15.587112	10.331853
4/28/2018 5:00	61200	11.570642	15.548599	10.281853
4/28/2018 5:15	62100	11.591209	15.566757	10.234975
4/28/2018 5:30	63000	11.587183	15.56459	10.244152
4/28/2018 5:45	63900	11.595675	15.584213	10.224797
4/28/2018 6:00	64800	11.59166	15.546417	10.233949
4/28/2018 6:15	65700	11.591213	15.557312	10.234966
4/28/2018 6:30	66600	11.608213	15.572571	10.196218
4/28/2018 6:45	67500	11.604626	15.575485	10.204395
4/28/2018 7:00	68400	11.613583	15.575485	10.183979
4/28/2018 7:15	69300	11.607771	15.563141	10.197226
4/28/2018 7:30	70200	11.605076	15.558762	10.203369
4/28/2018 7:45	71100	11.610458	15.571854	10.1911
4/28/2018 8:00	72000	11.605978	15.576935	10.201313
4/28/2018 8:15	72900	11.589865	15.547867	10.23804
4/28/2018 8:30	73800	11.587183	15.563141	10.244152
4/28/2018 8:45	74700	11.580473	15.580566	10.259446

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/28/2018 9:00	75600	11.564814	15.562393	10.295139
4/28/2018 9:15	76500	11.554987	15.547867	10.317537
4/28/2018 9:30	77400	11.564367	15.571854	10.296156
4/28/2018 9:45	78300	11.541992	15.571854	10.347156
4/28/2018 10:00	79200	11.550945	15.56749	10.326749
4/28/2018 10:15	80100	11.536627	15.550049	10.359385
4/28/2018 10:30	81000	11.523203	15.558762	10.389982
4/28/2018 10:45	81900	11.512032	15.542786	10.415445
4/28/2018 11:00	82800	11.510698	15.568939	10.418485
4/28/2018 11:15	83700	11.508469	15.555862	10.423567
4/28/2018 11:30	84600	11.496836	15.56459	10.450082
4/28/2018 11:45	85500	11.48744	15.557312	10.471497
4/28/2018 12:00	86400	11.493698	15.549316	10.457233
4/28/2018 12:15	87300	11.479813	15.568207	10.488882
4/28/2018 12:30	88200	11.475365	15.560226	10.499021
4/28/2018 12:45	89100	11.475788	15.554413	10.498055
4/28/2018 13:00	90000	11.473581	15.558762	10.503085
4/28/2018 13:15	90900	11.467758	15.603821	10.516358
4/28/2018 13:30	91800	11.482954	15.596558	10.481722
4/28/2018 13:45	92700	11.471775	15.582748	10.507202
4/28/2018 14:00	93600	11.484758	15.583466	10.47761
4/28/2018 14:15	94500	11.474014	15.577652	10.502099
4/28/2018 14:30	95400	11.479374	15.590012	10.489882
4/28/2018 14:45	96300	11.495928	15.584213	10.452151
4/28/2018 15:00	97200	11.503984	15.587112	10.433787
4/28/2018 15:15	98100	11.506685	15.569672	10.427631
4/28/2018 15:30	99000	11.511158	15.592926	10.417437
4/28/2018 15:45	99900	11.525463	15.580566	10.38483
4/28/2018 16:00	100800	11.531727	15.574753	10.370554
4/28/2018 16:15	101700	11.553185	15.56604	10.321646
4/28/2018 16:30	102600	11.565706	15.582031	10.293104
4/28/2018 16:45	103500	11.575106	15.5457	10.27168
4/28/2018 17:00	104400	11.574661	15.537704	10.272693
4/28/2018 17:15	105300	11.580004	15.558029	10.260516
4/28/2018 17:30	106200	11.593437	15.560944	10.229897
4/28/2018 17:45	107100	11.607775	15.570389	10.197217
4/28/2018 18:00	108000	11.618488	15.568207	10.172798
4/28/2018 18:15	108900	11.601044	15.559494	10.21256
4/28/2018 18:30	109800	11.611347	15.571854	10.189075
4/28/2018 18:45	110700	11.613134	15.582748	10.185001
4/28/2018 19:00	111600	11.617605	15.555862	10.17481
4/28/2018 19:15	112500	11.627874	15.576935	10.151404

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/28/2018 19:30	113400	11.609571	15.558029	10.193122
4/28/2018 19:45	114300	11.618492	15.572571	10.172789
4/28/2018 20:00	115200	11.615807	15.558762	10.17891
4/28/2018 20:15	116100	11.608644	15.572571	10.195235
4/28/2018 20:30	117000	11.611794	15.566757	10.188057
4/28/2018 20:45	117900	11.594351	15.587112	10.227815
4/28/2018 21:00	118800	11.597015	15.56604	10.221741
4/28/2018 21:15	119700	11.602383	15.581284	10.209508
4/28/2018 21:30	120600	11.588062	15.572571	10.242148
4/28/2018 21:45	121500	11.580923	15.556595	10.258421
4/28/2018 22:00	122400	11.571089	15.53624	10.280836
4/28/2018 22:15	123300	11.563917	15.549316	10.297182
4/28/2018 22:30	124200	11.536633	15.546417	10.359372
4/28/2018 22:45	125100	11.520519	15.539139	10.396099
4/28/2018 23:00	126000	11.519196	15.585663	10.399117
4/28/2018 23:15	126900	11.49057	15.576935	10.464363
4/28/2018 23:30	127800	11.498613	15.572571	10.44603
4/28/2018 23:45	128700	11.489681	15.56459	10.466389
4/29/2018 0:00	129600	11.474461	15.56604	10.501081
4/29/2018 0:15	130500	11.487	15.560944	10.472502
4/29/2018 0:30	131400	11.471779	15.555145	10.507194
4/29/2018 0:45	132300	11.456123	15.537704	10.542877
4/29/2018 1:00	133200	11.46015	15.569672	10.5337
4/29/2018 1:15	134100	11.438231	15.549316	10.583661
4/29/2018 1:30	135000	11.432865	15.568207	10.59589
4/29/2018 1:45	135900	11.429737	15.547867	10.60302
4/29/2018 2:00	136800	11.434647	15.56459	10.591829
4/29/2018 2:15	137700	11.417633	15.587112	10.630609
4/29/2018 2:30	138600	11.415861	15.575485	10.634647
4/29/2018 2:45	139500	11.436424	15.559494	10.587778
4/29/2018 3:00	140400	11.430185	15.568207	10.601998
4/29/2018 3:15	141300	11.438231	15.544968	10.583661
4/29/2018 3:30	142200	11.428381	15.578384	10.606112
4/29/2018 3:45	143100	11.443583	15.563858	10.571462
4/29/2018 4:00	144000	11.473127	15.558029	10.50412
4/29/2018 4:15	144900	11.457014	15.559494	10.540848
4/29/2018 4:30	145800	11.464178	15.58638	10.524518
4/29/2018 4:45	146700	11.461933	15.578384	10.529635
4/29/2018 5:00	147600	11.466862	15.561676	10.518401
4/29/2018 5:15	148500	11.471788	15.563858	10.507172
4/29/2018 5:30	149400	11.450302	15.531143	10.556146
4/29/2018 5:45	150300	11.474459	15.566757	10.501085

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/29/2018 6:00	151200	11.464163	15.558029	10.524553
4/29/2018 6:15	152100	11.478479	15.550049	10.491921
4/29/2018 6:30	153000	11.47134	15.552231	10.508194
4/29/2018 6:45	153900	11.46283	15.566757	10.527592
4/29/2018 7:00	154800	11.472666	15.56749	10.505173
4/29/2018 7:15	155700	11.469551	15.561676	10.512272
4/29/2018 7:30	156600	11.477142	15.585663	10.494968
4/29/2018 7:45	157500	11.470453	15.560944	10.510216
4/29/2018 8:00	158400	11.448965	15.557312	10.559194
4/29/2018 8:15	159300	11.452986	15.559494	10.550029
4/29/2018 8:30	160200	11.432409	15.550781	10.59693
4/29/2018 8:45	161100	11.430635	15.566757	10.600972
4/29/2018 9:00	162000	11.417624	15.573303	10.63063
4/29/2018 9:15	162900	11.422575	15.572571	10.619345
4/29/2018 9:30	163800	11.414515	15.552231	10.637717
4/29/2018 9:45	164700	11.398857	15.571854	10.673405
4/29/2018 10:00	165600	11.393505	15.563858	10.685604
4/29/2018 10:15	166500	11.407364	15.561676	10.654016
4/29/2018 10:30	167400	11.391708	15.562393	10.689699
4/29/2018 10:45	168300	11.385464	15.540604	10.703933
4/29/2018 11:00	169200	11.378733	15.554413	10.719275
4/29/2018 11:15	170100	11.35771	15.550049	10.767192
4/29/2018 11:30	171000	11.33267	15.579849	10.824265
4/29/2018 11:45	171900	11.349232	15.547867	10.786516
4/29/2018 12:00	172800	11.33713	15.556595	10.814101
4/29/2018 12:15	173700	11.316116	15.539871	10.861997
4/29/2018 12:30	174600	11.317019	15.542068	10.859941
4/29/2018 12:45	175500	11.323263	15.572571	10.845707
4/29/2018 13:00	176400	11.317448	15.54425	10.858962
4/29/2018 13:15	177300	11.288843	15.534073	10.924161
4/29/2018 13:30	178200	11.295547	15.546417	10.908879
4/29/2018 13:45	179100	11.286619	15.525345	10.92923
4/29/2018 14:00	180000	11.288843	15.56459	10.924161
4/29/2018 14:15	180900	11.285707	15.54425	10.931308
4/29/2018 14:30	181800	11.274961	15.562393	10.955801
4/29/2018 14:45	182700	11.267839	15.544968	10.972034
4/29/2018 15:00	183600	11.267372	15.556595	10.9731
4/29/2018 15:15	184500	11.270948	15.558029	10.964949
4/29/2018 15:30	185400	11.266912	15.576935	10.974148
4/29/2018 15:45	186300	11.253952	15.528244	11.003689
4/29/2018 16:00	187200	11.253944	15.556595	11.003706
4/29/2018 16:15	188100	11.266481	15.55368	10.97513

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/29/2018 16:30	189000	11.263802	15.571106	10.981238
4/29/2018 16:45	189900	11.26827	15.55368	10.971052
4/29/2018 17:00	190800	11.279871	15.536957	10.944612
4/29/2018 17:15	191700	11.283915	15.547867	10.935394
4/29/2018 17:30	192600	11.274969	15.53479	10.955784
4/29/2018 17:45	193500	11.291965	15.548599	10.917044
4/29/2018 18:00	194400	11.287504	15.56749	10.927213
4/29/2018 18:15	195300	11.292408	15.534073	10.916036
4/29/2018 18:30	196200	11.286142	15.542068	10.930317
4/29/2018 18:45	197100	11.300014	15.54425	10.898698
4/29/2018 19:00	198000	11.304052	15.550781	10.889494
4/29/2018 19:15	198900	11.306288	15.552963	10.884399
4/29/2018 19:30	199800	11.300905	15.53624	10.896667
4/29/2018 19:45	200700	11.294645	15.54425	10.910936
4/29/2018 20:00	201600	11.300905	15.548599	10.896667
4/29/2018 20:15	202500	11.311644	15.538422	10.872191
4/29/2018 20:30	203400	11.301346	15.555862	10.895663
4/29/2018 20:45	204300	11.310303	15.550049	10.875248
4/29/2018 21:00	205200	11.29063	15.557312	10.920087
4/29/2018 21:15	206100	11.280327	15.575485	10.943572
4/29/2018 21:30	207000	11.278538	15.560226	10.94765
4/29/2018 21:45	207900	11.28257	15.559494	10.938459
4/29/2018 22:00	208800	11.275396	15.552231	10.95481
4/29/2018 22:15	209700	11.259758	15.523895	10.990455
4/29/2018 22:30	210600	11.266018	15.510086	10.976187
4/29/2018 22:45	211500	11.258406	15.561676	10.993537
4/29/2018 23:00	212400	11.254398	15.53624	11.002671
4/29/2018 23:15	213300	11.253485	15.559494	11.004753
4/29/2018 23:30	214200	11.252169	15.537704	11.007753
4/29/2018 23:45	215100	11.245897	15.55368	11.022048
4/30/2018 0:00	216000	11.235613	15.555145	11.045489
4/30/2018 0:15	216900	11.250362	15.565308	11.01187
4/30/2018 0:30	217800	11.244995	15.544968	11.024104
4/30/2018 0:45	218700	11.227556	15.563858	11.063852
4/30/2018 1:00	219600	11.225782	15.56604	11.067896
4/30/2018 1:15	220500	11.225317	15.592194	11.068956
4/30/2018 1:30	221400	11.223545	15.542068	11.072995
4/30/2018 1:45	222300	11.223547	15.541321	11.07299
4/30/2018 2:00	223200	11.23068	15.53334	11.056731
4/30/2018 2:15	224100	11.221741	15.550781	11.077108
4/30/2018 2:30	225000	11.252596	15.537704	11.00678
4/30/2018 2:45	225900	11.228453	15.5457	11.06181

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/30/2018 3:00	226800	11.249924	15.560944	11.01287
4/30/2018 3:15	227700	11.266918	15.56604	10.974134
4/30/2018 3:30	228600	11.261108	15.555862	10.987377
4/30/2018 3:45	229500	11.257511	15.53624	10.995576
4/30/2018 4:00	230400	11.26737	15.557312	10.973104
4/30/2018 4:15	231300	11.274067	15.540604	10.95784
4/30/2018 4:30	232200	11.276749	15.562393	10.951728
4/30/2018 4:45	233100	11.284807	15.541321	10.93336
4/30/2018 5:00	234000	11.291517	15.539139	10.918066
4/30/2018 5:15	234900	11.305386	15.543503	10.886456
4/30/2018 5:30	235800	11.314325	15.546417	10.866079
4/30/2018 5:45	236700	11.31881	15.56749	10.855858
4/30/2018 6:00	237600	11.344307	15.527527	10.797742
4/30/2018 6:15	238500	11.333996	15.565308	10.821244
4/30/2018 6:30	239400	11.349659	15.544968	10.785542
4/30/2018 6:45	240300	11.359047	15.536957	10.764145
4/30/2018 7:00	241200	11.364874	15.54425	10.750863
4/30/2018 7:15	242100	11.381433	15.540604	10.713119
4/30/2018 7:30	243000	11.389025	15.555145	10.695816
4/30/2018 7:45	243900	11.379633	15.558762	10.717223
4/30/2018 8:00	244800	11.386795	15.539139	10.700898
4/30/2018 8:15	245700	11.389021	15.526779	10.695825
4/30/2018 8:30	246600	11.390379	15.536957	10.692729
4/30/2018 8:45	247500	11.391262	15.537704	10.690717
4/30/2018 9:00	248400	11.383211	15.561676	10.709067
4/30/2018 9:15	249300	11.365784	15.552231	10.74879
4/30/2018 9:30	250200	11.364431	15.5457	10.751872
4/30/2018 9:45	251100	11.314323	15.5457	10.866083
4/30/2018 10:00	252000	10.24177	15.501358	13.310764
4/30/2018 10:15	252900	10.225657	15.538422	13.347491
4/30/2018 10:30	253800	10.197475	15.539871	13.411724
4/30/2018 10:45	254700	10.199242	15.538422	13.407699
4/30/2018 11:00	255600	10.242186	15.563141	13.309816
4/30/2018 11:15	256500	10.19166	15.561676	13.42498
4/30/2018 11:30	257400	10.183119	15.58783	13.444448
4/30/2018 11:45	258300	10.168406	15.548599	13.477983
4/30/2018 12:00	259200	10.173317	15.577652	13.466789
4/30/2018 12:15	260100	10.170151	15.565308	13.474006
4/30/2018 12:30	261000	10.176462	15.579849	13.45962
4/30/2018 12:45	261900	10.183149	15.566757	13.444378
4/30/2018 13:00	262800	10.198771	15.594391	13.408772
4/30/2018 13:15	263700	10.215767	15.577652	13.370032

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
4/30/2018 13:30	264600	10.155413	15.574036	13.507599
4/30/2018 13:45	265500	10.180912	15.576218	13.449478
4/30/2018 14:00	266400	10.142031	15.581284	13.5381
4/30/2018 14:15	267300	10.178701	15.578384	13.454516
4/30/2018 14:30	268200	10.18228	15.563858	13.446361
4/30/2018 14:45	269100	10.146006	15.563858	13.529039
4/30/2018 15:00	270000	10.176844	15.588562	13.458751
4/30/2018 15:15	270900	10.163013	15.575485	13.490273
4/30/2018 15:30	271800	10.186304	15.576218	13.437187
4/30/2018 15:45	272700	10.167482	15.587112	13.480087
4/30/2018 16:00	273600	10.168839	15.611816	13.476997
4/30/2018 16:15	274500	10.195223	15.592926	13.416859
4/30/2018 16:30	275400	10.213579	15.592194	13.375019
4/30/2018 16:45	276300	10.182676	15.577652	13.445456
4/30/2018 17:00	277200	10.166603	15.604553	13.482092
4/30/2018 17:15	278100	10.184521	15.603821	13.441252
4/30/2018 17:30	279000	10.172852	15.577652	13.46785
4/30/2018 17:45	279900	10.173307	15.58638	13.46681
4/30/2018 18:00	280800	10.180048	15.56604	13.451447
4/30/2018 18:15	281700	10.201479	15.574036	13.402599
4/30/2018 18:30	282600	10.167522	15.597992	13.479997
4/30/2018 18:45	283500	10.219347	15.572571	13.361873
4/30/2018 19:00	284400	10.186247	15.59874	13.437318
4/30/2018 19:15	285300	10.183573	15.581284	13.443413
4/30/2018 19:30	286200	10.1805	15.560944	13.450417
4/30/2018 19:45	287100	10.167944	15.58638	13.479036
4/30/2018 20:00	288000	10.201494	15.573303	13.402564
4/30/2018 20:15	288900	10.212229	15.58493	13.378098
4/30/2018 20:30	289800	10.210423	15.596558	13.382214
4/30/2018 20:45	290700	10.213095	15.58783	13.376123
4/30/2018 21:00	291600	10.19343	15.607452	13.420945
4/30/2018 21:15	292500	10.169277	15.600189	13.475997
4/30/2018 21:30	293400	10.208649	15.575485	13.386257
4/30/2018 21:45	294300	10.180443	15.595108	13.450547
4/30/2018 22:00	295200	10.186712	15.615448	13.436257
4/30/2018 22:15	296100	10.177801	15.576218	13.456568
4/30/2018 22:30	297000	10.198332	15.574036	13.409773
4/30/2018 22:45	297900	10.16526	15.58638	13.485152
4/30/2018 23:00	298800	10.212196	15.568207	13.378171
4/30/2018 23:15	299700	10.175539	15.582748	13.461724
4/30/2018 23:30	300600	10.167482	15.56459	13.480087
4/30/2018 23:45	301500	10.18849	15.595108	13.432205

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/1/2018 0:00	302400	10.164368	15.599457	13.487187
5/1/2018 0:15	303300	10.166149	15.587112	13.483127
5/1/2018 0:30	304200	10.159435	15.576218	13.49843
5/1/2018 0:45	305100	10.163488	15.58493	13.489191
5/1/2018 1:00	306000	10.153576	15.558762	13.511786
5/1/2018 1:15	306900	10.181787	15.600189	13.447482
5/1/2018 1:30	307800	10.181332	15.589279	13.448521
5/1/2018 1:45	308700	10.144257	15.594391	13.533027
5/1/2018 2:00	309600	10.18359	15.587112	13.443374
5/1/2018 2:15	310500	10.175539	15.621994	13.461724
5/1/2018 2:30	311400	10.162125	15.576218	13.4923
5/1/2018 2:45	312300	10.171061	15.60672	13.471932
5/1/2018 3:00	313200	10.190296	15.590012	13.428088
5/1/2018 3:15	314100	10.194763	15.601639	13.417907
5/1/2018 3:30	315000	10.185825	15.552963	13.438278
5/1/2018 3:45	315900	10.198351	15.579102	13.409729
5/1/2018 4:00	316800	10.165277	15.613998	13.485113
5/1/2018 4:15	317700	10.198771	15.599457	13.408772
5/1/2018 4:30	318600	10.18495	15.579849	13.440274
5/1/2018 4:45	319500	10.181356	15.593643	13.448464
5/1/2018 5:00	320400	10.168396	15.581284	13.478005
5/1/2018 5:15	321300	10.182741	15.579102	13.445309
5/1/2018 5:30	322200	10.174173	15.59874	13.464837
5/1/2018 5:45	323100	10.180016	15.576935	13.451521
5/1/2018 6:00	324000	10.171444	15.593643	13.471058
5/1/2018 6:15	324900	10.187574	15.580566	13.434292
5/1/2018 6:30	325800	10.188513	15.571106	13.432153
5/1/2018 6:45	326700	10.188513	15.587112	13.432153
5/1/2018 7:00	327600	10.159403	15.595825	13.498504
5/1/2018 7:15	328500	10.220718	15.580566	13.358747
5/1/2018 7:30	329400	10.19969	15.597992	13.406677
5/1/2018 7:45	330300	10.210423	15.582748	13.382214
5/1/2018 8:00	331200	10.190271	15.596558	13.428144
5/1/2018 8:15	332100	10.190716	15.593643	13.427132
5/1/2018 8:30	333000	10.214005	15.606003	13.374049
5/1/2018 8:45	333900	10.197857	15.579849	13.410855
5/1/2018 9:00	334800	10.233234	15.600906	13.330219
5/1/2018 9:15	335700	10.198771	15.550781	13.408772
5/1/2018 9:30	336600	10.231012	15.566757	13.335283
5/1/2018 9:45	337500	10.201454	15.58493	13.402656
5/1/2018 10:00	338400	10.223406	15.604553	13.352621
5/1/2018 10:15	339300	10.2341	15.587112	13.328245

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/1/2018 10:30	340200	10.21312	15.611099	13.376066
5/1/2018 10:45	341100	10.198771	15.58638	13.408772
5/1/2018 11:00	342000	10.178232	15.603104	13.455585
5/1/2018 11:15	342900	10.237255	15.58638	13.321054
5/1/2018 11:30	343800	10.219357	15.596558	13.361851
5/1/2018 11:45	344700	10.192966	15.619812	13.422002
5/1/2018 12:00	345600	10.211748	15.591461	13.379192
5/1/2018 12:15	346500	10.178625	15.594391	13.45469
5/1/2018 12:30	347400	10.18177	15.613998	13.447521
5/1/2018 12:45	348300	10.195223	15.602356	13.416859
5/1/2018 13:00	349200	10.185396	15.574036	13.439257
5/1/2018 13:15	350100	10.179573	15.583466	13.45253
5/1/2018 13:30	351000	10.177334	15.583466	13.457634
5/1/2018 13:45	351900	10.158075	15.585663	13.50153
5/1/2018 14:00	352800	10.231913	15.604553	13.333231
5/1/2018 14:15	353700	10.211748	15.580566	13.379192
5/1/2018 14:30	354600	10.16926	15.592194	13.476036
5/1/2018 14:45	355500	10.144695	15.594391	13.532026
5/1/2018 15:00	356400	10.183109	15.591461	13.444469
5/1/2018 15:15	357300	10.166561	15.583466	13.482187
5/1/2018 15:30	358200	10.172369	15.595108	13.46895
5/1/2018 15:45	359100	10.167049	15.584213	13.481075
5/1/2018 16:00	360000	10.171061	15.56749	13.471932
5/1/2018 16:15	360900	10.178692	15.593643	13.454538
5/1/2018 16:30	361800	10.190773	15.568939	13.427002
5/1/2018 16:45	362700	10.179998	15.596558	13.45156
5/1/2018 17:00	363600	10.184496	15.571854	13.441309
5/1/2018 17:15	364500	10.151386	15.595825	13.516776
5/1/2018 17:30	365400	10.167927	15.58783	13.479074
5/1/2018 17:45	366300	10.183109	15.584213	13.444469
5/1/2018 18:00	367200	10.16703	15.604553	13.481118
5/1/2018 18:15	368100	10.192068	15.585663	13.424049
5/1/2018 18:30	369000	10.215767	15.596558	13.370032
5/1/2018 18:45	369900	10.196091	15.588562	13.414881
5/1/2018 19:00	370800	10.198351	15.614716	13.409729
5/1/2018 19:15	371700	10.201948	15.569672	13.401529
5/1/2018 19:30	372600	10.192068	15.571106	13.424049
5/1/2018 19:45	373500	10.175051	15.601639	13.462837
5/1/2018 20:00	374400	10.241302	15.576935	13.311829
5/1/2018 20:15	375300	10.207718	15.588562	13.388379
5/1/2018 20:30	376200	10.193863	15.611816	13.419958
5/1/2018 20:45	377100	10.205959	15.579849	13.392387

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/1/2018 21:00	378000	10.170118	15.579849	13.474079
5/1/2018 21:15	378900	10.19524	15.602356	13.41682
5/1/2018 21:30	379800	10.193863	15.599457	13.419958
5/1/2018 21:45	380700	10.204187	15.569672	13.396426
5/1/2018 22:00	381600	10.197435	15.574753	13.411816
5/1/2018 22:15	382500	10.201511	15.583466	13.402525
5/1/2018 22:30	383400	10.207302	15.584213	13.389326
5/1/2018 22:45	384300	10.195629	15.58493	13.415933
5/1/2018 23:00	385200	10.202805	15.584213	13.399578
5/1/2018 23:15	386100	10.190733	15.584213	13.427093
5/1/2018 23:30	387000	10.182245	15.579849	13.446439
5/1/2018 23:45	387900	10.178669	15.590012	13.45459
5/2/2018 0:00	388800	10.171085	15.58493	13.471876
5/2/2018 0:15	389700	10.180452	15.590012	13.450525
5/2/2018 0:30	390600	10.179998	15.591461	13.45156
5/2/2018 0:45	391500	10.157629	15.58783	13.502546
5/2/2018 1:00	392400	10.164345	15.583466	13.48724
5/2/2018 1:15	393300	10.192078	15.592926	13.424027
5/2/2018 1:30	394200	10.146912	15.58493	13.526975
5/2/2018 1:45	395100	10.174597	15.588562	13.463872
5/2/2018 2:00	396000	10.155386	15.597992	13.507659
5/2/2018 2:15	396900	10.164785	15.592194	13.486235
5/2/2018 2:30	397800	10.189413	15.597992	13.430101
5/2/2018 2:45	398700	10.186256	15.585663	13.437296
5/2/2018 3:00	399600	10.183573	15.601639	13.443413
5/2/2018 3:15	400500	10.193853	15.594391	13.41998
5/2/2018 3:30	401400	10.181356	15.585663	13.448464
5/2/2018 3:45	402300	10.179102	15.595108	13.453604
5/2/2018 4:00	403200	10.183109	15.596558	13.444469
5/2/2018 4:15	404100	10.178183	15.604553	13.455699
5/2/2018 4:30	405000	10.20372	15.596558	13.397491
5/2/2018 4:45	405900	10.182264	15.595825	13.446396
5/2/2018 5:00	406800	10.171949	15.613281	13.469906
5/2/2018 5:15	407700	10.173714	15.594391	13.465885
5/2/2018 5:30	408600	10.197857	15.60672	13.410855
5/2/2018 5:45	409500	10.214901	15.60527	13.372006
5/2/2018 6:00	410400	10.183109	15.59874	13.444469
5/2/2018 6:15	411300	10.20372	15.621262	13.397491
5/2/2018 6:30	412200	10.185835	15.592194	13.438257
5/2/2018 6:45	413100	10.184917	15.576218	13.440348
5/2/2018 7:00	414000	10.229202	15.606003	13.339409
5/2/2018 7:15	414900	10.195223	15.579849	13.416859

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/2/2018 7:30	415800	10.218437	15.595108	13.363946
5/2/2018 7:45	416700	10.178658	15.607452	13.454617
5/2/2018 8:00	417600	10.237234	15.613281	13.321102
5/2/2018 8:15	418500	10.226509	15.591461	13.345548
5/2/2018 8:30	419400	10.237696	15.569672	13.32005
5/2/2018 8:45	420300	10.211739	15.585663	13.379214
5/2/2018 9:00	421200	10.247068	15.601639	13.298687
5/2/2018 9:15	422100	10.196108	15.597992	13.414842
5/2/2018 9:30	423000	10.214005	15.589279	13.374049
5/2/2018 9:45	423900	10.2082	15.595825	13.387279
5/2/2018 10:00	424800	10.229658	15.602356	13.33837
5/2/2018 10:15	425700	10.20952	15.589279	13.384271
5/2/2018 10:30	426600	10.175951	15.58783	13.460785
5/2/2018 10:45	427500	10.231855	15.587112	13.333362
5/2/2018 11:00	428400	10.191603	15.595108	13.42511
5/2/2018 11:15	429300	10.212675	15.560944	13.37708
5/2/2018 11:30	430200	10.24979	15.589279	13.292482
5/2/2018 11:45	431100	10.179102	15.588562	13.453604
5/2/2018 12:00	432000	10.188942	15.580566	13.431175
5/2/2018 12:15	432900	10.20459	15.582748	13.395509
5/2/2018 12:30	433800	10.213072	15.58638	13.376175
5/2/2018 12:45	434700	10.210445	15.576218	13.382162
5/2/2018 13:00	435600	10.198332	15.593643	13.409773
5/2/2018 13:15	436500	10.202812	15.592926	13.399561
5/2/2018 13:30	437400	10.191181	15.58783	13.426071
5/2/2018 13:45	438300	10.222927	15.585663	13.353712
5/2/2018 14:00	439200	10.197849	15.603821	13.410872
5/2/2018 14:15	440100	10.201021	15.602356	13.403643
5/2/2018 14:30	441000	10.19964	15.590012	13.40679
5/2/2018 14:45	441900	10.167492	15.573303	13.480066
5/2/2018 15:00	442800	10.173285	15.573303	13.466863
5/2/2018 15:15	443700	10.186319	15.592926	13.437153
5/2/2018 15:30	444600	10.198753	15.608902	13.408812
5/2/2018 15:45	445500	10.187574	15.608902	13.434292
5/2/2018 16:00	446400	10.178658	15.592194	13.454617
5/2/2018 16:15	447300	10.183556	15.58638	13.443452
5/2/2018 16:30	448200	10.192043	15.595825	13.424106
5/2/2018 16:45	449100	10.159435	15.602356	13.49843
5/2/2018 17:00	450000	10.174173	15.589279	13.464837
5/2/2018 17:15	450900	10.184935	15.589279	13.440309
5/2/2018 17:30	451800	10.184895	15.592926	13.4404
5/2/2018 17:45	452700	10.167904	15.595825	13.479127

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/2/2018 18:00	453600	10.173756	15.593643	13.465789
5/2/2018 18:15	454500	10.183119	15.612534	13.444448
5/2/2018 18:30	455400	10.187159	15.58493	13.43524
5/2/2018 18:45	456300	10.200163	15.601639	13.405599
5/2/2018 19:00	457200	10.182245	15.585663	13.446439
5/2/2018 19:15	458100	10.181803	15.601639	13.447447
5/2/2018 19:30	459000	10.174639	15.594391	13.463777
5/2/2018 19:45	459900	10.18848	15.593643	13.432227
5/2/2018 20:00	460800	10.18759	15.584213	13.434258
5/2/2018 20:15	461700	10.189377	15.58493	13.430183
5/2/2018 20:30	462600	10.203745	15.61908	13.397434
5/2/2018 20:45	463500	10.193853	15.603821	13.41998
5/2/2018 21:00	464400	10.217127	15.589279	13.366933
5/2/2018 21:15	465300	10.20327	15.583466	13.398517
5/2/2018 21:30	466200	10.185825	15.596558	13.438278
5/2/2018 21:45	467100	10.220263	15.589279	13.359785
5/2/2018 22:00	468000	10.199705	15.602356	13.406643
5/2/2018 22:15	468900	10.194754	15.579849	13.417929
5/2/2018 22:30	469800	10.186745	15.595108	13.436183
5/2/2018 22:45	470700	10.22381	15.595108	13.3517
5/2/2018 23:00	471600	10.213072	15.589279	13.376175
5/2/2018 23:15	472500	10.199284	15.594391	13.407603
5/2/2018 23:30	473400	10.210423	15.593643	13.382214
5/2/2018 23:45	474300	10.190264	15.576935	13.428162
5/3/2018 0:00	475200	10.184917	15.582031	13.440348
5/3/2018 0:15	476100	10.180872	15.584213	13.449569
5/3/2018 0:30	477000	10.189875	15.595108	13.429049
5/3/2018 0:45	477900	10.188061	15.616165	13.433184
5/3/2018 1:00	478800	10.180902	15.568207	13.449499
5/3/2018 1:15	479700	10.177275	15.591461	13.457768
5/3/2018 1:30	480600	10.184029	15.603104	13.442373
5/3/2018 1:45	481500	10.18845	15.624878	13.432297
5/3/2018 2:00	482400	10.158539	15.603821	13.500473
5/3/2018 2:15	483300	10.191156	15.590744	13.426127
5/3/2018 2:30	484200	10.187574	15.599457	13.434292
5/3/2018 2:45	485100	10.161657	15.58638	13.493365
5/3/2018 3:00	486000	10.142857	15.600906	13.536218
5/3/2018 3:15	486900	10.219379	15.595825	13.361798
5/3/2018 3:30	487800	10.17326	15.593643	13.466919
5/3/2018 3:45	488700	10.172392	15.573303	13.468898
5/3/2018 4:00	489600	10.154539	15.603104	13.50959
5/3/2018 4:15	490500	10.202396	15.594391	13.400508

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/3/2018 4:30	491400	10.171085	15.592194	13.471876
5/3/2018 4:45	492300	10.18848	15.594391	13.432227
5/3/2018 5:00	493200	10.183167	15.611816	13.444339
5/3/2018 5:15	494100	10.184454	15.578384	13.441404
5/3/2018 5:30	495000	10.159002	15.597992	13.499416
5/3/2018 5:45	495900	10.192078	15.583466	13.424027
5/3/2018 6:00	496800	10.16926	15.62706	13.476036
5/3/2018 6:15	497700	10.196108	15.574753	13.414842
5/3/2018 6:30	498600	10.182665	15.606003	13.445482
5/3/2018 6:45	499500	10.192068	15.582748	13.424049
5/3/2018 7:00	500400	10.239908	15.616898	13.315007
5/3/2018 7:15	501300	10.186722	15.597275	13.436235
5/3/2018 7:30	502200	10.171019	15.595108	13.472028
5/3/2018 7:45	503100	10.228298	15.58493	13.34147
5/3/2018 8:00	504000	10.231428	15.607452	13.334335
5/3/2018 8:15	504900	10.208609	15.627792	13.386349
5/3/2018 8:30	505800	10.207277	15.576935	13.389383
5/3/2018 8:45	506700	10.215305	15.59874	13.371084
5/3/2018 9:00	507600	10.217127	15.591461	13.366933
5/3/2018 9:15	508500	10.214878	15.595108	13.372059
5/3/2018 9:30	509400	10.201479	15.601639	13.402599
5/3/2018 9:45	510300	10.232315	15.577652	13.332314
5/3/2018 10:00	511200	10.219379	15.615448	13.361798
5/3/2018 10:15	512100	10.309256	15.599457	13.156943
5/3/2018 10:30	513000	10.201046	15.597992	13.403585
5/3/2018 10:45	513900	10.198351	15.600906	13.409729
5/3/2018 11:00	514800	10.21669	15.568939	13.367929
5/3/2018 11:15	515700	10.226976	15.60672	13.344482
5/3/2018 11:30	516600	10.211308	15.594391	13.380197
5/3/2018 11:45	517500	10.219357	15.594391	13.361851
5/3/2018 12:00	518400	10.271706	15.582748	13.242531
5/3/2018 12:15	519300	10.185802	15.599457	13.438331
5/3/2018 12:30	520200	10.192068	15.571854	13.424049
5/3/2018 12:45	521100	10.20013	15.596558	13.405673
5/3/2018 13:00	522000	10.174156	15.607452	13.464876
5/3/2018 13:15	522900	10.193382	15.596558	13.421054
5/3/2018 13:30	523800	10.197889	15.60817	13.410781
5/3/2018 13:45	524700	10.232347	15.603104	13.33224
5/3/2018 14:00	525600	10.213516	15.595825	13.375162
5/3/2018 14:15	526500	10.186279	15.589279	13.437244
5/3/2018 14:30	527400	10.16526	15.610352	13.485152
5/3/2018 14:45	528300	10.20549	15.589279	13.393456

2090FR				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/3/2018 15:00	529200	10.226068	15.592194	13.346552
5/3/2018 15:15	530100	10.163473	15.590012	13.489226
5/3/2018 15:30	531000	10.175966	15.595825	13.460751
5/3/2018 15:45	531900	10.187622	15.572571	13.434183
5/3/2018 16:00	532800	10.18849	15.581284	13.432205
5/3/2018 16:15	533700	10.178625	15.604553	13.45469
5/3/2018 16:30	534600	10.195208	15.595825	13.416894
5/3/2018 16:45	535500	10.167927	15.581284	13.479074
5/3/2018 17:00	536400	10.205051	15.58493	13.394457
5/3/2018 17:15	537300	10.165733	15.627792	13.484075
5/3/2018 17:30	538200	10.205011	15.58783	13.394547
5/3/2018 17:45	539100	10.188925	15.592194	13.431214
5/3/2018 18:00	540000	10.159428	15.597275	13.498447
5/3/2018 18:15	540900	10.217972	15.607452	13.365007
5/3/2018 18:30	541800	10.158983	15.597992	13.49946
5/3/2018 18:45	542700	10.186279	15.624878	13.437244
5/3/2018 19:00	543600	10.196108	15.611099	13.414842
5/3/2018 19:15	544500	10.191628	15.61763	13.425054
5/3/2018 19:30	545400	10.193398	15.593643	13.42102
5/3/2018 19:45	546300	10.214846	15.591461	13.372132
5/3/2018 20:00	547200	10.154921	15.580566	13.50872
5/3/2018 20:15	548100	10.20459	15.603821	13.395509
5/3/2018 20:30	549000	10.170151	15.595108	13.474006
5/3/2018 20:45	549900	10.165277	15.603104	13.485113
5/3/2018 21:00	550800	10.174639	15.600906	13.463777
5/3/2018 21:15	551700	10.227442	15.590744	13.343422
5/3/2018 21:30	552600	10.172369	15.590012	13.46895
5/3/2018 21:45	553500	10.191181	15.584213	13.426071
5/3/2018 22:00	554400	10.17378	15.612534	13.465733
5/3/2018 22:15	555300	10.207302	15.585663	13.389326
5/3/2018 22:30	556200	10.19742	15.606003	13.41185
5/3/2018 22:45	557100	10.180452	15.599457	13.450525
5/3/2018 23:00	558000	10.162125	15.59874	13.4923
5/3/2018 23:15	558900	10.180912	15.584213	13.449478
5/3/2018 23:30	559800	10.203745	15.590012	13.397434
5/3/2018 23:45	560700	10.157654	15.609634	13.50249
5/4/2018 0:00	561600	10.163437	15.585663	13.489309
5/4/2018 0:15	562500	10.168839	15.580566	13.476997
5/4/2018 0:30	563400	10.182245	15.608902	13.446439
5/4/2018 0:45	564300	10.18848	15.613998	13.432227
5/4/2018 1:00	565200	10.173285	15.612534	13.466863
5/4/2018 1:15	566100	10.217127	15.606003	13.366933

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/4/2018 1:30	567000	10.17326	15.610352	13.466919
5/4/2018 1:45	567900	10.182676	15.607452	13.445456
5/4/2018 2:00	568800	10.179102	15.579849	13.453604
5/4/2018 2:15	569700	10.184053	15.603821	13.442317
5/4/2018 2:30	570600	10.16526	15.578384	13.485152
5/4/2018 2:45	571500	10.178658	15.619812	13.454617
5/4/2018 3:00	572400	10.18849	15.611816	13.432205
5/4/2018 3:15	573300	10.174629	15.60672	13.463799
5/4/2018 3:30	574200	10.159002	15.59874	13.499416
5/4/2018 3:45	575100	10.178192	15.616898	13.455677
5/4/2018 4:00	576000	10.158983	15.581284	13.49946
5/4/2018 4:15	576900	10.141523	15.595108	13.539256
5/4/2018 4:30	577800	10.224709	15.596558	13.349651
5/4/2018 4:45	578700	10.163048	15.585663	13.490195
5/4/2018 5:00	579600	10.152275	15.615448	13.51475
5/4/2018 5:15	580500	10.162561	15.587112	13.491304
5/4/2018 5:30	581400	10.160782	15.611099	13.49536
5/4/2018 5:45	582300	10.129452	15.590744	13.566772
5/4/2018 6:00	583200	10.163904	15.592926	13.488244
5/4/2018 6:15	584100	10.196974	15.60672	13.412868
5/4/2018 6:30	585000	10.175083	15.60672	13.462763
5/4/2018 6:45	585900	10.214441	15.610352	13.373054
5/4/2018 7:00	586800	10.919378	15.58783	11.766285
5/4/2018 7:15	587700	11.056702	15.606003	11.453283
5/4/2018 7:30	588600	11.130926	15.595825	11.284102
5/4/2018 7:45	589500	11.158215	15.58783	11.221904
5/4/2018 8:00	590400	10.002388	15.595108	13.856389

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/4/2018 9:30	0	7.442057	16.621506	19.50235
5/4/2018 9:45	900	7.425148	16.360382	19.54089
5/4/2018 10:00	1800	7.424248	16.295807	19.542942
5/4/2018 10:15	2700	7.431992	16.275482	19.525291
5/4/2018 10:30	3600	7.441456	16.256607	19.503719
5/4/2018 10:45	4500	7.439671	16.220337	19.50779
5/4/2018 11:00	5400	7.445156	16.228317	19.495285
5/4/2018 11:15	6300	7.435314	16.234131	19.517719
5/4/2018 11:30	7200	7.45631	16.220337	19.469862
5/4/2018 11:45	8100	7.44747	16.219604	19.490013
5/4/2018 12:00	9000	7.463373	16.236298	19.453764
5/4/2018 12:15	9900	7.451891	16.192032	19.479935
5/4/2018 12:30	10800	7.434301	16.233383	19.520027
5/4/2018 12:45	11700	7.45631	16.227585	19.469862
5/4/2018 13:00	12600	7.455341	16.222504	19.472071
5/4/2018 13:15	13500	7.469299	16.200729	19.440256
5/4/2018 13:30	14400	7.456745	16.215973	19.46887
5/4/2018 13:45	15300	7.44824	16.20871	19.488256
5/4/2018 14:00	16200	7.484171	16.213806	19.406359
5/4/2018 14:15	17100	7.447409	16.211624	19.49015
5/4/2018 14:30	18000	7.450941	16.227585	19.4821
5/4/2018 14:45	18900	7.441517	16.239197	19.50358
5/4/2018 15:00	19800	7.445097	16.222504	19.49542
5/4/2018 15:15	20700	7.437166	16.202194	19.513496
5/4/2018 15:30	21600	7.424162	16.189835	19.543139
5/4/2018 15:45	22500	7.429499	16.211624	19.530973
5/4/2018 16:00	23400	7.428528	16.202194	19.533186
5/4/2018 16:15	24300	7.428198	16.19783	19.533939
5/4/2018 16:30	25200	7.426348	16.202194	19.538157
5/4/2018 16:45	26100	7.42585	16.179688	19.539291
5/4/2018 17:00	27000	7.432119	16.206543	19.525
5/4/2018 17:15	27900	7.408314	16.203629	19.57926
5/4/2018 17:30	28800	7.41696	16.189117	19.559553
5/4/2018 17:45	29700	7.402176	16.184036	19.59325
5/4/2018 18:00	30600	7.402683	16.182587	19.592094
5/4/2018 18:15	31500	7.412985	16.176788	19.568613
5/4/2018 18:30	32400	7.403957	16.183319	19.58919
5/4/2018 18:45	33300	7.390665	16.147751	19.619488
5/4/2018 19:00	34200	7.404028	16.156464	19.589029
5/4/2018 19:15	35100	7.38522	16.172424	19.631899
5/4/2018 19:30	36000	7.404478	16.173874	19.588003
5/4/2018 19:45	36900	7.393768	16.160095	19.612413

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/4/2018 20:00	37800	7.398205	16.150665	19.602303
5/4/2018 20:15	38700	7.403009	16.136124	19.591351
5/4/2018 20:30	39600	7.386166	16.170975	19.629744
5/4/2018 20:45	40500	7.377224	16.159363	19.650124
5/4/2018 21:00	41400	7.383482	16.137589	19.63586
5/4/2018 21:15	42300	7.391991	16.145569	19.616467
5/4/2018 21:30	43200	7.396664	16.134689	19.605814
5/4/2018 21:45	44100	7.406828	16.120895	19.582647
5/4/2018 22:00	45000	7.404327	16.136856	19.588346
5/4/2018 22:15	45900	7.405933	16.1492	19.584686
5/4/2018 22:30	46800	7.40863	16.120163	19.578539
5/4/2018 22:45	47700	7.413242	16.14267	19.568027
5/4/2018 23:00	48600	7.418476	16.165909	19.556097
5/4/2018 23:15	49500	7.41757	16.123795	19.558163
5/4/2018 23:30	50400	7.41663	16.139053	19.560307
5/4/2018 23:45	51300	7.416121	16.145569	19.561466
5/5/2018 0:00	52200	7.418924	16.13324	19.555077
5/5/2018 0:15	53100	7.409473	16.157928	19.576618
5/5/2018 0:30	54000	7.407726	16.130325	19.580601
5/5/2018 0:45	54900	7.40505	16.114365	19.586699
5/5/2018 1:00	55800	7.411261	16.140488	19.572544
5/5/2018 1:15	56700	7.401054	16.133957	19.595808
5/5/2018 1:30	57600	7.399282	16.117249	19.599846
5/5/2018 1:45	58500	7.402298	16.133957	19.592972
5/5/2018 2:00	59400	7.403708	16.13324	19.58976
5/5/2018 2:15	60300	7.388924	16.128876	19.623457
5/5/2018 2:30	61200	7.392569	16.136856	19.615149
5/5/2018 2:45	62100	7.382769	16.131073	19.637486
5/5/2018 3:00	63000	7.375116	16.148468	19.654928
5/5/2018 3:15	63900	7.375057	16.147751	19.655064
5/5/2018 3:30	64800	7.388098	16.133957	19.62534
5/5/2018 3:45	65700	7.378744	16.140488	19.64666
5/5/2018 4:00	66600	7.37336	16.125259	19.658932
5/5/2018 4:15	67500	7.378618	16.119446	19.646946
5/5/2018 4:30	68400	7.371988	16.128876	19.662058
5/5/2018 4:45	69300	7.370756	16.10347	19.664865
5/5/2018 5:00	70200	7.36257	16.13324	19.683525
5/5/2018 5:15	71100	7.362957	16.144852	19.682642
5/5/2018 5:30	72000	7.367958	16.118713	19.671244
5/5/2018 5:45	72900	7.378685	16.154282	19.646793
5/5/2018 6:00	73800	7.37904	16.13324	19.645985
5/5/2018 6:15	74700	7.355778	16.134689	19.699007

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/5/2018 6:30	75600	7.375612	16.117249	19.653797
5/5/2018 6:45	76500	7.356668	16.126709	19.696976
5/5/2018 7:00	77400	7.352831	16.127441	19.705723
5/5/2018 7:15	78300	7.359861	16.124512	19.689699
5/5/2018 7:30	79200	7.377071	16.14267	19.650473
5/5/2018 7:45	80100	7.369741	16.133957	19.667179
5/5/2018 8:00	81000	7.378618	16.121613	19.646946
5/5/2018 8:15	81900	7.375931	16.132507	19.653072
5/5/2018 8:30	82800	7.371988	16.148468	19.662058
5/5/2018 8:45	83700	7.376831	16.140488	19.65102
5/5/2018 9:00	84600	7.386806	16.139053	19.628283
5/5/2018 9:15	85500	7.396027	16.124512	19.607267
5/5/2018 9:30	86400	7.386806	16.135422	19.628283
5/5/2018 9:45	87300	7.394741	16.115097	19.610197
5/5/2018 10:00	88200	7.399334	16.136124	19.599728
5/5/2018 10:15	89100	7.415859	16.13324	19.562063
5/5/2018 10:30	90000	7.407785	16.144104	19.580465
5/5/2018 10:45	90900	7.415394	16.141937	19.563124
5/5/2018 11:00	91800	7.411816	16.151382	19.57128
5/5/2018 11:15	92700	7.41675	16.137589	19.560032
5/5/2018 11:30	93600	7.414524	16.137589	19.565105
5/5/2018 11:45	94500	7.426147	16.127441	19.538612
5/5/2018 12:00	95400	7.426081	16.128143	19.538765
5/5/2018 12:15	96300	7.431459	16.134689	19.526505
5/5/2018 12:30	97200	7.449894	16.136124	19.484488
5/5/2018 12:45	98100	7.432804	16.117996	19.523439
5/5/2018 13:00	99000	7.433315	16.113647	19.522274
5/5/2018 13:15	99900	7.443737	16.112183	19.49852
5/5/2018 13:30	100800	7.436012	16.136856	19.516127
5/5/2018 13:45	101700	7.436586	16.087509	19.514818
5/5/2018 14:00	102600	7.430262	16.117996	19.529234
5/5/2018 14:15	103500	7.430588	16.117996	19.528492
5/5/2018 14:30	104400	7.428896	16.104919	19.532347
5/5/2018 14:45	105300	7.433897	16.117249	19.520948
5/5/2018 15:00	106200	7.418594	16.128143	19.555828
5/5/2018 15:15	107100	7.423515	16.096207	19.544611
5/5/2018 15:30	108000	7.424864	16.118713	19.541538
5/5/2018 15:45	108900	7.422245	16.126709	19.547506
5/5/2018 16:00	109800	7.405283	16.115097	19.586168
5/5/2018 16:15	110700	7.40836	16.10202	19.579157
5/5/2018 16:30	111600	7.401054	16.104919	19.595808
5/5/2018 16:45	112500	7.407856	16.115814	19.580305

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/5/2018 17:00	113400	7.39761	16.128143	19.603659
5/5/2018 17:15	114300	7.399733	16.148468	19.59882
5/5/2018 17:30	115200	7.393965	16.143402	19.611967
5/5/2018 17:45	116100	7.390007	16.1129	19.620987
5/5/2018 18:00	117000	7.367779	16.117249	19.671652
5/5/2018 18:15	117900	7.370186	16.120895	19.666166
5/5/2018 18:30	118800	7.367496	16.113647	19.672297
5/5/2018 18:45	119700	7.384129	16.112183	19.634386
5/5/2018 19:00	120600	7.376556	16.137589	19.651646
5/5/2018 19:15	121500	7.365812	16.130325	19.676134
5/5/2018 19:30	122400	7.372858	16.101288	19.660076
5/5/2018 19:45	123300	7.365746	16.116531	19.676287
5/5/2018 20:00	124200	7.360392	16.118713	19.68849
5/5/2018 20:15	125100	7.364733	16.1129	19.678595
5/5/2018 20:30	126000	7.354954	16.114365	19.700884
5/5/2018 20:45	126900	7.368904	16.118713	19.669088
5/5/2018 21:00	127800	7.369862	16.130325	19.666904
5/5/2018 21:15	128700	7.35367	16.112183	19.70381
5/5/2018 21:30	129600	7.389519	16.087509	19.622101
5/5/2018 21:45	130500	7.372917	16.123062	19.659941
5/5/2018 22:00	131400	7.358082	16.138306	19.693754
5/5/2018 22:15	132300	7.371542	16.113647	19.663074
5/5/2018 22:30	133200	7.368713	16.117996	19.669521
5/5/2018 22:45	134100	7.36396	16.134689	19.680357
5/5/2018 23:00	135000	7.37414	16.122345	19.657154
5/5/2018 23:15	135900	7.374714	16.139053	19.655846
5/5/2018 23:30	136800	7.388031	16.122345	19.625492
5/5/2018 23:45	137700	7.378744	16.122345	19.64666
5/6/2018 0:00	138600	7.375179	16.110733	19.654785
5/6/2018 0:15	139500	7.389044	16.131775	19.623182
5/6/2018 0:30	140400	7.380857	16.127441	19.641842
5/6/2018 0:45	141300	7.389885	16.121613	19.621265
5/6/2018 1:00	142200	7.381815	16.099121	19.63966
5/6/2018 1:15	143100	7.379633	16.135422	19.644632
5/6/2018 1:30	144000	7.39308	16.128876	19.613983
5/6/2018 1:45	144900	7.398003	16.128143	19.602762
5/6/2018 2:00	145800	7.398003	16.1129	19.602762
5/6/2018 2:15	146700	7.395264	16.138306	19.609005
5/6/2018 2:30	147600	7.396208	16.133957	19.606853
5/6/2018 2:45	148500	7.374714	16.131073	19.655846
5/6/2018 3:00	149400	7.387629	16.13324	19.62641
5/6/2018 3:15	150300	7.386301	16.10347	19.629435

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/6/2018 3:30	151200	7.392246	16.135422	19.615883
5/6/2018 3:45	152100	7.377794	16.117996	19.648825
5/6/2018 4:00	153000	7.376446	16.114365	19.651897
5/6/2018 4:15	153900	7.392187	16.112183	19.616018
5/6/2018 4:30	154800	7.382261	16.117249	19.638643
5/6/2018 4:45	155700	7.374258	16.148468	19.656885
5/6/2018 5:00	156600	7.371078	16.114365	19.664131
5/6/2018 5:15	157500	7.375551	16.117249	19.653936
5/6/2018 5:30	158400	7.365614	16.125977	19.676586
5/6/2018 5:45	159300	7.376446	16.143402	19.651897
5/6/2018 6:00	160200	7.371191	16.132507	19.663876
5/6/2018 6:15	161100	7.388613	16.122345	19.624165
5/6/2018 6:30	162000	7.37484	16.099838	19.655558
5/6/2018 6:45	162900	7.390451	16.108551	19.619974
5/6/2018 7:00	163800	7.381491	16.123795	19.640398
5/6/2018 7:15	164700	7.387703	16.123795	19.62624
5/6/2018 7:30	165600	7.383272	16.120895	19.636339
5/6/2018 7:45	166500	7.38592	16.138306	19.630304
5/6/2018 8:00	167400	7.389578	16.107101	19.621965
5/6/2018 8:15	168300	7.4133	16.123795	19.567896
5/6/2018 8:30	169200	7.413172	16.105652	19.568188
5/6/2018 8:45	170100	7.428507	16.099838	19.533234
5/6/2018 9:00	171000	7.417816	16.128143	19.557602
5/6/2018 9:15	171900	7.416862	16.104202	19.559776
5/6/2018 9:30	172800	7.431135	16.131073	19.527245
5/6/2018 9:45	173700	7.436075	16.108551	19.515984
5/6/2018 10:00	174600	7.436012	16.104202	19.516127
5/6/2018 10:15	175500	7.433777	16.136124	19.521223
5/6/2018 10:30	176400	7.439316	16.109283	19.508598
5/6/2018 10:45	177300	7.455818	16.140488	19.470984
5/6/2018 11:00	178200	7.459339	16.120163	19.462957
5/6/2018 11:15	179100	7.458895	16.120895	19.46397
5/6/2018 11:30	180000	7.463444	16.112183	19.453602
5/6/2018 11:45	180900	7.458464	16.125259	19.464954
5/6/2018 12:00	181800	7.476496	16.123062	19.423853
5/6/2018 12:15	182700	7.471958	16.115097	19.434196
5/6/2018 12:30	183600	7.474525	16.130325	19.428345
5/6/2018 12:45	184500	7.485331	16.09259	19.403715
5/6/2018 13:00	185400	7.477448	16.091858	19.421684
5/6/2018 13:15	186300	7.492485	16.126709	19.387409
5/6/2018 13:30	187200	7.495186	16.125259	19.381252
5/6/2018 13:45	188100	7.483519	16.114365	19.407846

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/6/2018 14:00	189000	7.47739	16.082428	19.421814
5/6/2018 14:15	189900	7.490763	16.107101	19.391335
5/6/2018 14:30	190800	7.488972	16.102753	19.395416
5/6/2018 14:45	191700	7.486656	16.110001	19.400694
5/6/2018 15:00	192600	7.487568	16.146317	19.398617
5/6/2018 15:15	193500	7.491159	16.098404	19.39043
5/6/2018 15:30	194400	7.480902	16.122345	19.413811
5/6/2018 15:45	195300	7.476305	16.125977	19.424288
5/6/2018 16:00	196200	7.476929	16.135422	19.422867
5/6/2018 16:15	197100	7.472404	16.089676	19.433178
5/6/2018 16:30	198000	7.470167	16.125259	19.438278
5/6/2018 16:45	198900	7.478729	16.10202	19.418762
5/6/2018 17:00	199800	7.46837	16.107101	19.442373
5/6/2018 17:15	200700	7.462482	16.108551	19.455793
5/6/2018 17:30	201600	7.453144	16.144104	19.477079
5/6/2018 17:45	202500	7.458403	16.114365	19.465094
5/6/2018 18:00	203400	7.448648	16.110733	19.487326
5/6/2018 18:15	204300	7.446251	16.120163	19.49279
5/6/2018 18:30	205200	7.436075	16.123795	19.515984
5/6/2018 18:45	206100	7.435226	16.114365	19.517918
5/6/2018 19:00	207000	7.432093	16.117249	19.525061
5/6/2018 19:15	207900	7.443737	16.110733	19.49852
5/6/2018 19:30	208800	7.429024	16.116531	19.532057
5/6/2018 19:45	209700	7.419111	16.124512	19.554649
5/6/2018 20:00	210600	7.423574	16.110001	19.544477
5/6/2018 20:15	211500	7.441891	16.10347	19.502729
5/6/2018 20:30	212400	7.420969	16.112183	19.550415
5/6/2018 20:45	213300	7.423574	16.107101	19.544477
5/6/2018 21:00	214200	7.411877	16.106384	19.57114
5/6/2018 21:15	215100	7.424084	16.1129	19.543316
5/6/2018 21:30	216000	7.417389	16.117249	19.558577
5/6/2018 21:45	216900	7.41642	16.118713	19.560783
5/6/2018 22:00	217800	7.420067	16.094772	19.552471
5/6/2018 22:15	218700	7.415512	16.123795	19.562853
5/6/2018 22:30	219600	7.424028	16.104202	19.543442
5/6/2018 22:45	220500	7.415972	16.094772	19.561806
5/6/2018 23:00	221400	7.4335	16.104919	19.521852
5/6/2018 23:15	222300	7.434853	16.115814	19.51877
5/6/2018 23:30	223200	7.439701	16.124512	19.507719
5/6/2018 23:45	224100	7.43792	16.125259	19.51178
5/7/2018 0:00	225000	7.449556	16.131073	19.485256
5/7/2018 0:15	225900	7.442463	16.118713	19.501425

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/7/2018 0:30	226800	7.439129	16.110001	19.509024
5/7/2018 0:45	227700	7.445087	16.113647	19.495441
5/7/2018 1:00	228600	7.45137	16.128876	19.481121
5/7/2018 1:15	229500	7.44195	16.094772	19.502594
5/7/2018 1:30	230400	7.444563	16.099121	19.496637
5/7/2018 1:45	231300	7.455387	16.128143	19.471966
5/7/2018 2:00	232200	7.440994	16.086044	19.504772
5/7/2018 2:15	233100	7.444178	16.094772	19.497517
5/7/2018 2:30	234000	7.446371	16.09404	19.492516
5/7/2018 2:45	234900	7.454435	16.114365	19.474136
5/7/2018 3:00	235800	7.460751	16.088959	19.459742
5/7/2018 3:15	236700	7.445528	16.120163	19.494438
5/7/2018 3:30	237600	7.423071	16.115814	19.545624
5/7/2018 3:45	238500	7.432034	16.125259	19.525196
5/7/2018 4:00	239400	7.424469	16.083862	19.542439
5/7/2018 4:15	240300	7.433052	16.115097	19.522875
5/7/2018 4:30	241200	7.425823	16.130325	19.539351
5/7/2018 4:45	242100	7.423071	16.128143	19.545624
5/7/2018 5:00	243000	7.432665	16.094772	19.523758
5/7/2018 5:15	243900	7.429863	16.099838	19.530144
5/7/2018 5:30	244800	7.41675	16.1129	19.560032
5/7/2018 5:45	245700	7.415512	16.123795	19.562853
5/7/2018 6:00	246600	7.415512	16.093307	19.562853
5/7/2018 6:15	247500	7.409256	16.104919	19.577114
5/7/2018 6:30	248400	7.39402	16.123062	19.611841
5/7/2018 6:45	249300	7.395823	16.10347	19.607733
5/7/2018 7:00	250200	7.391354	16.117996	19.617918
5/7/2018 7:15	251100	7.405739	16.084595	19.585131
5/7/2018 7:30	252000	7.395	16.083862	19.609606
5/7/2018 7:45	252900	7.402546	16.10202	19.592407
5/7/2018 8:00	253800	7.408419	16.107101	19.579021
5/7/2018 8:15	254700	7.414711	16.106384	19.56468
5/7/2018 8:30	255600	7.405611	16.099121	19.585421
5/7/2018 8:45	256500	7.406054	16.078064	19.584412
5/7/2018 9:00	257400	7.409832	16.083862	19.5758
5/7/2018 9:15	258300	7.405798	16.09259	19.584995
5/7/2018 9:30	259200	7.406044	16.099121	19.584435
5/7/2018 9:45	260100	7.396648	16.086792	19.60585
5/7/2018 10:00	261000	7.401957	16.120163	19.59375
5/7/2018 10:15	261900	7.354053	16.099838	19.702936
5/7/2018 10:30	262800	7.348368	16.09259	19.715897
5/7/2018 10:45	263700	7.337917	16.097656	19.739716

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/7/2018 11:00	264600	7.339123	16.109283	19.736969
5/7/2018 11:15	265500	7.350788	16.098404	19.710379
5/7/2018 11:30	266400	7.33964	16.081696	19.73579
5/7/2018 11:45	267300	7.345085	16.086044	19.723379
5/7/2018 12:00	268200	7.338242	16.10202	19.738977
5/7/2018 12:15	269100	7.354053	16.083862	19.702936
5/7/2018 12:30	270000	7.341375	16.116531	19.731834
5/7/2018 12:45	270900	7.350847	16.107101	19.710245
5/7/2018 13:00	271800	7.359602	16.117996	19.69029
5/7/2018 13:15	272700	7.349445	16.082428	19.71344
5/7/2018 13:30	273600	7.361025	16.085327	19.687046
5/7/2018 13:45	274500	7.350788	16.096939	19.710379
5/7/2018 14:00	275400	7.340981	16.124512	19.732735
5/7/2018 14:15	276300	7.341753	16.094772	19.730974
5/7/2018 14:30	277200	7.350788	16.065002	19.710379
5/7/2018 14:45	278100	7.35354	16.081696	19.704105
5/7/2018 15:00	279000	7.356035	16.109283	19.69842
5/7/2018 15:15	279900	7.345415	16.102753	19.722626
5/7/2018 15:30	280800	7.344965	16.1129	19.723652
5/7/2018 15:45	281700	7.347656	16.107834	19.717518
5/7/2018 16:00	282600	7.337275	16.106384	19.74118
5/7/2018 16:15	283500	7.347984	16.100571	19.71677
5/7/2018 16:30	284400	7.333813	16.10347	19.749071
5/7/2018 16:45	285300	7.31797	16.113647	19.785181
5/7/2018 17:00	286200	7.314404	16.081696	19.793312
5/7/2018 17:15	287100	7.319817	16.096939	19.780973
5/7/2018 17:30	288000	7.325594	16.108551	19.767805
5/7/2018 17:45	288900	7.327442	16.104202	19.763592
5/7/2018 18:00	289800	7.329687	16.094772	19.758474
5/7/2018 18:15	290700	7.315786	16.088959	19.790159
5/7/2018 18:30	291600	7.318987	16.097656	19.782864
5/7/2018 18:45	292500	7.305437	16.121613	19.813749
5/7/2018 19:00	293400	7.304096	16.116531	19.816805
5/7/2018 19:15	294300	7.299603	16.115097	19.827047
5/7/2018 19:30	295200	7.28899	16.069366	19.851236
5/7/2018 19:45	296100	7.291939	16.112183	19.844515
5/7/2018 20:00	297000	7.297365	16.101288	19.832148
5/7/2018 20:15	297900	7.290657	16.113647	19.847437
5/7/2018 20:30	298800	7.290281	16.091858	19.848293
5/7/2018 20:45	299700	7.300432	16.096207	19.825155
5/7/2018 21:00	300600	7.296846	16.10347	19.83333
5/7/2018 21:15	301500	7.290976	16.120163	19.84671

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/7/2018 21:30	302400	7.293797	16.107101	19.840281
5/7/2018 21:45	303300	7.307737	16.109283	19.808506
5/7/2018 22:00	304200	7.285217	16.104919	19.859837
5/7/2018 22:15	305100	7.284954	16.09549	19.860435
5/7/2018 22:30	306000	7.302429	16.068619	19.820604
5/7/2018 22:45	306900	7.29954	16.104202	19.82719
5/7/2018 23:00	307800	7.310678	16.106384	19.801802
5/7/2018 23:15	308700	7.307541	16.091858	19.808952
5/7/2018 23:30	309600	7.301397	16.100571	19.822956
5/7/2018 23:45	310500	7.3032	16.09259	19.818848
5/8/2018 0:00	311400	7.321165	16.110001	19.777899
5/8/2018 0:15	312300	7.337666	16.071533	19.74029
5/8/2018 0:30	313200	7.328348	16.082428	19.761526
5/8/2018 0:45	314100	7.336704	16.107834	19.742481
5/8/2018 1:00	315000	7.334602	16.102753	19.747272
5/8/2018 1:15	315900	7.346703	16.110001	19.719692
5/8/2018 1:30	316800	7.351116	16.087509	19.709631
5/8/2018 1:45	317700	7.35124	16.102753	19.709349
5/8/2018 2:00	318600	7.333633	16.116531	19.749481
5/8/2018 2:15	319500	7.366781	16.104202	19.673925
5/8/2018 2:30	320400	7.355145	16.088959	19.700449
5/8/2018 2:45	321300	7.363148	16.076614	19.682209
5/8/2018 3:00	322200	7.352512	16.099838	19.70645
5/8/2018 3:15	323100	7.362171	16.083862	19.684433
5/8/2018 3:30	324000	7.356035	16.120163	19.69842
5/8/2018 3:45	324900	7.352512	16.130325	19.70645
5/8/2018 4:00	325800	7.363148	16.110001	19.682209
5/8/2018 4:15	326700	7.358706	16.10347	19.692333
5/8/2018 4:30	327600	7.3458	16.091141	19.721748
5/8/2018 4:45	328500	7.344452	16.108551	19.724821
5/8/2018 5:00	329400	7.352442	16.096939	19.70661
5/8/2018 5:15	330300	7.349888	16.089676	19.712431
5/8/2018 5:30	331200	7.347921	16.10202	19.716913
5/8/2018 5:45	332100	7.35647	16.104202	19.697428
5/8/2018 6:00	333000	7.352064	16.079514	19.707472
5/8/2018 6:15	333900	7.343565	16.055573	19.726843
5/8/2018 6:30	334800	7.343096	16.115097	19.727913
5/8/2018 6:45	335700	7.3302	16.072983	19.757305
5/8/2018 7:00	336600	7.338631	16.074432	19.738091
5/8/2018 7:15	337500	7.334602	16.075882	19.747272
5/8/2018 7:30	338400	7.332941	16.089676	19.751059
5/8/2018 7:45	339300	7.343626	16.078796	19.726704

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/8/2018 8:00	340200	7.339445	16.06282	19.736233
5/8/2018 8:15	341100	7.325197	16.061371	19.768709
5/8/2018 8:30	342000	7.333326	16.080978	19.750179
5/8/2018 8:45	342900	7.317266	16.10202	19.786785
5/8/2018 9:00	343800	7.34227	16.091141	19.729795
5/8/2018 9:15	344700	7.343929	16.105652	19.726013
5/8/2018 9:30	345600	7.327957	16.096207	19.762419
5/8/2018 9:45	346500	7.33601	16.105652	19.744064
5/8/2018 10:00	347400	7.333258	16.085327	19.750338
5/8/2018 10:15	348300	7.327833	16.110733	19.762701
5/8/2018 10:30	349200	7.323402	16.110001	19.7728
5/8/2018 10:45	350100	7.339445	16.098404	19.736233
5/8/2018 11:00	351000	7.341181	16.087509	19.732277
5/8/2018 11:15	351900	7.331409	16.110001	19.754549
5/8/2018 11:30	352800	7.337215	16.094772	19.741316
5/8/2018 11:45	353700	7.323341	16.087509	19.77294
5/8/2018 12:00	354600	7.350729	16.080231	19.710514
5/8/2018 12:15	355500	7.350729	16.086792	19.710514
5/8/2018 12:30	356400	7.352894	16.106384	19.70558
5/8/2018 12:45	357300	7.355589	16.094772	19.699436
5/8/2018 13:00	358200	7.363708	16.078064	19.680929
5/8/2018 13:15	359100	7.365051	16.088226	19.67787
5/8/2018 13:30	360000	7.358265	16.117249	19.693338
5/8/2018 13:45	360900	7.373234	16.090408	19.65922
5/8/2018 14:00	361800	7.367743	16.082428	19.671736
5/8/2018 14:15	362700	7.366455	16.09259	19.674669
5/8/2018 14:30	363600	7.375368	16.108551	19.654354
5/8/2018 14:45	364500	7.367245	16.099838	19.672871
5/8/2018 15:00	365400	7.373495	16.077347	19.658623
5/8/2018 15:15	366300	7.363663	16.072983	19.681034
5/8/2018 15:30	367200	7.372229	16.085327	19.66151
5/8/2018 15:45	368100	7.370426	16.089676	19.665619
5/8/2018 16:00	369000	7.369478	16.1129	19.667778
5/8/2018 16:15	369900	7.361847	16.09404	19.685173
5/8/2018 16:30	370800	7.356529	16.081696	19.697294
5/8/2018 16:45	371700	7.361025	16.112183	19.687046
5/8/2018 17:00	372600	7.345739	16.10202	19.721888
5/8/2018 17:15	373500	7.34568	16.099838	19.722021
5/8/2018 17:30	374400	7.346113	16.09259	19.721035
5/8/2018 17:45	375300	7.341309	16.077347	19.731987
5/8/2018 18:00	376200	7.337215	16.090408	19.741316
5/8/2018 18:15	377100	7.339844	16.09404	19.735325

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/8/2018 18:30	378000	7.334087	16.096207	19.748446
5/8/2018 18:45	378900	7.329296	16.071533	19.759367
5/8/2018 19:00	379800	7.318529	16.073715	19.783907
5/8/2018 19:15	380700	7.322971	16.055573	19.773783
5/8/2018 19:30	381600	7.315786	16.084595	19.790159
5/8/2018 19:45	382500	7.320776	16.093307	19.778786
5/8/2018 20:00	383400	7.323469	16.09404	19.772648
5/8/2018 20:15	384300	7.309139	16.09549	19.805309
5/8/2018 20:30	385200	7.314901	16.104202	19.792177
5/8/2018 20:45	386100	7.313946	16.086792	19.794355
5/8/2018 21:00	387000	7.315672	16.094772	19.790421
5/8/2018 21:15	387900	7.299231	16.085327	19.827894
5/8/2018 21:30	388800	7.306273	16.078796	19.811844
5/8/2018 21:45	389700	7.312534	16.070084	19.797571
5/8/2018 22:00	390600	7.308336	16.104202	19.80714
5/8/2018 22:15	391500	7.319061	16.09404	19.782694
5/8/2018 22:30	392400	7.294302	16.105652	19.839128
5/8/2018 22:45	393300	7.303255	16.089676	19.818722
5/8/2018 23:00	394200	7.303255	16.09404	19.818722
5/8/2018 23:15	395100	7.310369	16.075882	19.802505
5/8/2018 23:30	396000	7.320282	16.086044	19.779913
5/8/2018 23:45	396900	7.317524	16.070084	19.7862
5/9/2018 0:00	397800	7.322006	16.06282	19.775982
5/9/2018 0:15	398700	7.330133	16.080978	19.757458
5/9/2018 0:30	399600	7.341753	16.098404	19.730974
5/9/2018 0:45	400500	7.327833	16.084595	19.762701
5/9/2018 1:00	401400	7.339512	16.045395	19.736082
5/9/2018 1:15	402300	7.362881	16.070084	19.682817
5/9/2018 1:30	403200	7.344837	16.060638	19.723944
5/9/2018 1:45	404100	7.358841	16.091141	19.692024
5/9/2018 2:00	405000	7.362366	16.09404	19.68399
5/9/2018 2:15	405900	7.363708	16.065002	19.680929
5/9/2018 2:30	406800	7.357887	16.049759	19.694199
5/9/2018 2:45	407700	7.352634	16.068619	19.706171
5/9/2018 3:00	408600	7.370943	16.059189	19.66444
5/9/2018 3:15	409500	7.365992	16.067902	19.675726
5/9/2018 3:30	410400	7.373177	16.068619	19.659349
5/9/2018 3:45	411300	7.375547	16.069366	19.653946
5/9/2018 4:00	412200	7.371456	16.075165	19.663271
5/9/2018 4:15	413100	7.385269	16.059921	19.631786
5/9/2018 4:30	414000	7.396397	16.066452	19.606424
5/9/2018 4:45	414900	7.365051	16.074432	19.67787

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/9/2018 5:00	415800	7.368835	16.088959	19.669245
5/9/2018 5:15	416700	7.380835	16.087509	19.641893
5/9/2018 5:30	417600	7.376692	16.059189	19.651337
5/9/2018 5:45	418500	7.381739	16.094772	19.639833
5/9/2018 6:00	419400	7.36871	16.075882	19.669531
5/9/2018 6:15	420300	7.37101	16.082428	19.664288
5/9/2018 6:30	421200	7.366396	16.080231	19.674805
5/9/2018 6:45	422100	7.369017	16.110001	19.668831
5/9/2018 7:00	423000	7.359226	16.106384	19.691147
5/9/2018 7:15	423900	7.354818	16.075165	19.701193
5/9/2018 7:30	424800	7.369532	16.07225	19.667658
5/9/2018 7:45	425700	7.359661	16.080231	19.690155
5/9/2018 8:00	426600	7.3682	16.100571	19.670692
5/9/2018 8:15	427500	7.366335	16.091141	19.674944
5/9/2018 8:30	428400	7.356979	16.091141	19.696268
5/9/2018 8:45	429300	7.376249	16.107834	19.652346
5/9/2018 9:00	430200	7.36282	16.107834	19.682957
5/9/2018 9:15	431100	7.365932	16.068619	19.675861
5/9/2018 9:30	432000	7.355656	16.082428	19.699286
5/9/2018 9:45	432900	7.371845	16.08316	19.662384
5/9/2018 10:00	433800	7.362307	16.088959	19.684126
5/9/2018 10:15	434700	7.366335	16.104202	19.674944
5/9/2018 10:30	435600	7.371262	16.096207	19.663713
5/9/2018 10:45	436500	7.354319	16.099121	19.702332
5/9/2018 11:00	437400	7.354319	16.094772	19.702332
5/9/2018 11:15	438300	7.370874	16.071533	19.664597
5/9/2018 11:30	439200	7.376692	16.096939	19.651337
5/9/2018 11:45	440100	7.378109	16.091141	19.648108
5/9/2018 12:00	441000	7.371784	16.086044	19.662523
5/9/2018 12:15	441900	7.381603	16.075165	19.640142
5/9/2018 12:30	442800	7.385269	16.09259	19.631786
5/9/2018 12:45	443700	7.379875	16.059189	19.644081
5/9/2018 13:00	444600	7.383741	16.086044	19.635269
5/9/2018 13:15	445500	7.383467	16.096207	19.635895
5/9/2018 13:30	446400	7.399132	16.086044	19.600189
5/9/2018 13:45	447300	7.397865	16.091141	19.603077
5/9/2018 14:00	448200	7.396397	16.065735	19.606424
5/9/2018 14:15	449100	7.38341	16.09259	19.636024
5/9/2018 14:30	450000	7.387951	16.07225	19.625673
5/9/2018 14:45	450900	7.393703	16.091858	19.612562
5/9/2018 15:00	451800	7.402027	16.08316	19.59359
5/9/2018 15:15	452700	7.399649	16.068619	19.59901

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/9/2018 15:30	453600	7.40624	16.057755	19.583986
5/9/2018 15:45	454500	7.397738	16.099838	19.603367
5/9/2018 16:00	455400	7.389235	16.090408	19.622747
5/9/2018 16:15	456300	7.399649	16.078796	19.59901
5/9/2018 16:30	457200	7.396904	16.101288	19.605267
5/9/2018 16:45	458100	7.400047	16.088226	19.598103
5/9/2018 17:00	459000	7.390194	16.086792	19.620562
5/9/2018 17:15	459900	7.390579	16.106384	19.619682
5/9/2018 17:30	460800	7.385147	16.101288	19.632065
5/9/2018 17:45	461700	7.399132	16.115097	19.600189
5/9/2018 18:00	462600	7.394543	16.110001	19.610649
5/9/2018 18:15	463500	7.381159	16.096939	19.641155
5/9/2018 18:30	464400	7.389235	16.100571	19.622747
5/9/2018 18:45	465300	7.390915	16.100571	19.618917
5/9/2018 19:00	466200	7.367743	16.082428	19.671736
5/9/2018 19:15	467100	7.373955	16.088226	19.657576
5/9/2018 19:30	468000	7.365688	16.088226	19.676416
5/9/2018 19:45	468900	7.368589	16.09259	19.669806
5/9/2018 20:00	469800	7.359098	16.09549	19.691437
5/9/2018 20:15	470700	7.357819	16.102753	19.694355
5/9/2018 20:30	471600	7.361025	16.098404	19.687046
5/9/2018 20:45	472500	7.362307	16.121613	19.684126
5/9/2018 21:00	473400	7.334665	16.086044	19.747128
5/9/2018 21:15	474300	7.341431	16.084595	19.731709
5/9/2018 21:30	475200	7.339123	16.087509	19.736969
5/9/2018 21:45	476100	7.339905	16.093307	19.735186
5/9/2018 22:00	477000	7.323341	16.094772	19.77294
5/9/2018 22:15	477900	7.331982	16.096207	19.753244
5/9/2018 22:30	478800	7.331091	16.075882	19.755276
5/9/2018 22:45	479700	7.3302	16.067169	19.757305
5/9/2018 23:00	480600	7.325264	16.08316	19.768557
5/9/2018 23:15	481500	7.339983	16.066452	19.735008
5/9/2018 23:30	482400	7.3458	16.117996	19.721748
5/9/2018 23:45	483300	7.328787	16.085327	19.760527
5/10/2018 0:00	484200	7.344452	16.097656	19.724821
5/10/2018 0:15	485100	7.334665	16.068619	19.747128
5/10/2018 0:30	486000	7.343491	16.080978	19.727013
5/10/2018 0:45	486900	7.360229	16.060638	19.68886
5/10/2018 1:00	487800	7.354252	16.075165	19.702484
5/10/2018 1:15	488700	7.363708	16.079514	19.680929
5/10/2018 1:30	489600	7.357368	16.065735	19.695381
5/10/2018 1:45	490500	7.379477	16.055573	19.644989

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/10/2018 2:00	491400	7.356598	16.044678	19.697138
5/10/2018 2:15	492300	7.384428	16.066452	19.633703
5/10/2018 2:30	493200	7.375494	16.048309	19.654068
5/10/2018 2:45	494100	7.379055	16.054825	19.64595
5/10/2018 3:00	495000	7.378546	16.051208	19.647112
5/10/2018 3:15	495900	7.387491	16.046127	19.626722
5/10/2018 3:30	496800	7.397804	16.021439	19.603214
5/10/2018 3:45	497700	7.40715	16.030884	19.581913
5/10/2018 4:00	498600	7.398384	16.031601	19.601894
5/10/2018 4:15	499500	7.40766	16.041763	19.580751
5/10/2018 4:30	500400	7.391222	16.049759	19.618217
5/10/2018 4:45	501300	7.393463	16.054108	19.61311
5/10/2018 5:00	502200	7.394669	16.054108	19.610363
5/10/2018 5:15	503100	7.400539	16.060638	19.596981
5/10/2018 5:30	504000	7.408159	16.041763	19.579613
5/10/2018 5:45	504900	7.389301	16.049759	19.622597
5/10/2018 6:00	505800	7.394669	16.051926	19.610363
5/10/2018 6:15	506700	7.39888	16.06282	19.600763
5/10/2018 6:30	507600	7.411232	16.063553	19.572609
5/10/2018 6:45	508500	7.397865	16.038132	19.603077
5/10/2018 7:00	509400	7.396456	16.048309	19.606289
5/10/2018 7:15	510300	7.390253	16.072983	19.620426
5/10/2018 7:30	511200	7.392885	16.057007	19.614428
5/10/2018 7:45	512100	7.392614	16.06427	19.615044
5/10/2018 8:00	513000	7.376049	16.020706	19.652802
5/10/2018 8:15	513900	7.37816	16.010544	19.647989
5/10/2018 8:30	514800	7.392496	16.058472	19.615314
5/10/2018 8:45	515700	7.379942	16.057007	19.643929
5/10/2018 9:00	516600	7.391153	16.044678	19.618374
5/10/2018 9:15	517500	7.380011	16.040329	19.643772
5/10/2018 9:30	518400	7.364212	16.054108	19.679783
5/10/2018 9:45	519300	7.375547	16.047562	19.653946
5/10/2018 10:00	520200	7.376362	16.033768	19.652088
5/10/2018 10:15	521100	7.387114	16.040329	19.627583
5/10/2018 10:30	522000	7.371071	16.046844	19.664148
5/10/2018 10:45	522900	7.372358	16.044678	19.661215
5/10/2018 11:00	523800	7.368896	16.048309	19.669106
5/10/2018 11:15	524700	7.386738	16.033768	19.628439
5/10/2018 11:30	525600	7.378222	16.052658	19.64785
5/10/2018 11:45	526500	7.392052	16.043213	19.616327
5/10/2018 12:00	527400	7.397411	16.038864	19.604111
5/10/2018 12:15	528300	7.38942	16.043213	19.622326

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/10/2018 12:30	529200	7.396515	16.043961	19.606153
5/10/2018 12:45	530100	7.401424	16.035965	19.594963
5/10/2018 13:00	531000	7.393404	16.038864	19.613245
5/10/2018 13:15	531900	7.404522	16.039581	19.587904
5/10/2018 13:30	532800	7.403751	16.040329	19.589661
5/10/2018 13:45	533700	7.422617	16.051208	19.546659
5/10/2018 14:00	534600	7.415817	16.054108	19.562159
5/10/2018 14:15	535500	7.425629	16.023621	19.539795
5/10/2018 14:30	536400	7.430103	16.040329	19.529596
5/10/2018 14:45	537300	7.421595	16.054108	19.54899
5/10/2018 15:00	538200	7.431515	16.046127	19.526379
5/10/2018 15:15	539100	7.429653	16.049759	19.530622
5/10/2018 15:30	540000	7.429319	16.041046	19.531382
5/10/2018 15:45	540900	7.435038	16.036682	19.518349
5/10/2018 16:00	541800	7.429207	16.027969	19.531639
5/10/2018 16:15	542700	7.439623	16.052658	19.507898
5/10/2018 16:30	543600	7.448902	16.030151	19.486748
5/10/2018 16:45	544500	7.437344	16.02507	19.513092
5/10/2018 17:00	545400	7.458317	16.017807	19.465288
5/10/2018 17:15	546300	7.436882	16.027969	19.514145
5/10/2018 17:30	547200	7.43644	16.025787	19.515154
5/10/2018 17:45	548100	7.444092	16.049759	19.497711
5/10/2018 18:00	549000	7.444033	16.029419	19.497847
5/10/2018 18:15	549900	7.445	16.041763	19.495642
5/10/2018 18:30	550800	7.443974	16.036682	19.497982
5/10/2018 18:45	551700	7.435165	16.009109	19.518057
5/10/2018 19:00	552600	7.423004	16.003296	19.545776
5/10/2018 19:15	553500	7.425234	16.012741	19.540695
5/10/2018 19:30	554400	7.413599	16.053375	19.567215
5/10/2018 19:45	555300	7.417173	16.057007	19.559067
5/10/2018 20:00	556200	7.416801	16.079514	19.559916
5/10/2018 20:15	557100	7.413019	16.080231	19.568535
5/10/2018 20:30	558000	7.394335	16.069366	19.611124
5/10/2018 20:45	558900	7.396648	16.074432	19.60585
5/10/2018 21:00	559800	7.401493	16.065735	19.594807
5/10/2018 21:15	560700	7.409967	16.06427	19.575491
5/10/2018 21:30	561600	7.391541	16.062103	19.617493
5/10/2018 21:45	562500	7.400539	16.07225	19.596981
5/10/2018 22:00	563400	7.409967	16.079514	19.575491
5/10/2018 22:15	564300	7.395563	16.091858	19.608324
5/10/2018 22:30	565200	7.391153	16.067169	19.618374
5/10/2018 22:45	566100	7.393328	16.076614	19.613419

2091A1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/10/2018 23:00	567000	7.393703	16.070084	19.612562
5/10/2018 23:15	567900	7.374203	16.067902	19.657011
5/10/2018 23:30	568800	7.375675	16.068619	19.653654
5/10/2018 23:45	569700	7.382137	16.082428	19.638926
5/11/2018 0:00	570600	7.385326	16.045395	19.631657
5/11/2018 0:15	571500	7.387114	16.020706	19.627583
5/11/2018 0:30	572400	7.38096	16.029419	19.641607
5/11/2018 0:45	573300	7.382956	16.027252	19.63706
5/11/2018 1:00	574200	7.383526	16.01709	19.635759
5/11/2018 1:15	575100	7.38813	16.035233	19.625265
5/11/2018 1:30	576000	7.393524	16.017807	19.61297
5/11/2018 1:45	576900	7.392179	16.033768	19.616035
5/11/2018 2:00	577800	7.389048	16.021439	19.623175
5/11/2018 2:15	578700	7.403372	16.038132	19.590525
5/11/2018 2:30	579600	7.40727	16.044678	19.581638
5/11/2018 2:45	580500	7.40822	16.050476	19.579473
5/11/2018 3:00	581400	7.412773	16.042496	19.569096
5/11/2018 3:15	582300	7.409967	16.041046	19.575491
5/11/2018 3:30	583200	7.422617	16.033768	19.546659
5/11/2018 3:45	584100	7.412708	16.044678	19.569244
5/11/2018 4:00	585000	7.413599	16.027252	19.567215
5/11/2018 4:15	585900	7.420238	16.033768	19.55208
5/11/2018 4:30	586800	7.414038	16.036682	19.566214
5/11/2018 4:45	587700	7.414173	16.023621	19.565905
5/11/2018 5:00	588600	7.433937	16.030151	19.520857
5/11/2018 5:15	589500	7.423004	16.031601	19.545776
5/11/2018 5:30	590400	7.407852	16.034515	19.580313
5/11/2018 5:45	591300	7.433813	16.014191	19.521139
5/11/2018 6:00	592200	7.435598	16.028702	19.517071
5/11/2018 6:15	593100	7.406872	16.019257	19.582548
5/11/2018 6:30	594000	7.40464	16.025787	19.587633
5/11/2018 6:45	594900	7.411356	16.019257	19.572327
5/11/2018 7:00	595800	7.403877	16.039581	19.589373
5/11/2018 7:15	596700	7.426529	16.040329	19.537743
5/11/2018 7:30	597600	7.463747	16.049026	19.452911
5/11/2018 7:45	598500	7.482655	16.046127	19.409815
5/11/2018 8:00	599400	7.440527	16.026535	19.505836
5/11/2018 8:15	600300	7.398939	16.013458	19.600628
5/11/2018 8:30	601200	7.39394	16.033768	19.612022
5/11/2018 8:45	602100	7.386738	16.002563	19.628439
5/11/2018 9:00	603000	7.389475	16.055573	19.6222
5/11/2018 9:15	603900	7.359024	16.029419	19.691607

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/4/2018 9:00	0	11.668484	17.470383	10.04699
5/4/2018 9:15	900	11.653928	17.428604	10.080168
5/4/2018 9:30	1800	11.649465	17.42572	10.090341
5/4/2018 9:45	2700	11.647387	17.40123	10.095077
5/4/2018 10:00	3600	11.637506	17.42572	10.117597
5/4/2018 10:15	4500	11.628689	17.406265	10.137695
5/4/2018 10:30	5400	11.633882	17.418518	10.125859
5/4/2018 10:45	6300	11.636977	17.405548	10.118803
5/4/2018 11:00	7200	11.642316	17.417801	10.106635
5/4/2018 11:15	8100	11.647627	17.390427	10.094529
5/4/2018 11:30	9000	11.655213	17.414917	10.077237
5/4/2018 11:45	9900	11.662422	17.411331	10.060806
5/4/2018 12:00	10800	11.672348	17.408432	10.038182
5/4/2018 12:15	11700	11.683043	17.396194	10.013803
5/4/2018 12:30	12600	11.69558	17.411331	9.98523
5/4/2018 12:45	13500	11.706758	17.397629	9.95975
5/4/2018 13:00	14400	11.715809	17.396912	9.939121
5/4/2018 13:15	15300	11.72343	17.418518	9.921751
5/4/2018 13:30	16200	11.729876	17.408432	9.907059
5/4/2018 13:45	17100	11.73582	17.404816	9.89351
5/4/2018 14:00	18000	11.74299	17.396912	9.877169
5/4/2018 14:15	18900	11.749837	17.408432	9.861561
5/4/2018 14:30	19800	11.75392	17.399078	9.852255
5/4/2018 14:45	20700	11.758896	17.391144	9.840913
5/4/2018 15:00	21600	11.764057	17.400513	9.829148
5/4/2018 15:15	22500	11.77151	17.391861	9.812161
5/4/2018 15:30	23400	11.775587	17.393295	9.802869
5/4/2018 15:45	24300	11.777182	17.413483	9.799234
5/4/2018 16:00	25200	11.782106	17.382492	9.788009
5/4/2018 16:15	26100	11.779965	17.391144	9.792889
5/4/2018 16:30	27000	11.782426	17.387527	9.787281
5/4/2018 16:45	27900	11.783508	17.39978	9.784814
5/4/2018 17:00	28800	11.777966	17.388992	9.797445
5/4/2018 17:15	29700	11.776216	17.397629	9.801436
5/4/2018 17:30	30600	11.774015	17.404114	9.806451
5/4/2018 17:45	31500	11.772531	17.385376	9.809835
5/4/2018 18:00	32400	11.768982	17.398346	9.817924
5/4/2018 18:15	33300	11.767224	17.406982	9.82193
5/4/2018 18:30	34200	11.7621	17.394745	9.83361
5/4/2018 18:45	35100	11.758106	17.393295	9.842712
5/4/2018 19:00	36000	11.75334	17.401947	9.853577
5/4/2018 19:15	36900	11.75206	17.411331	9.856494

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/4/2018 19:30	37800	11.746295	17.387527	9.869635
5/4/2018 19:45	38700	11.746716	17.394745	9.868675
5/4/2018 20:00	39600	11.741269	17.417068	9.88109
5/4/2018 20:15	40500	11.740274	17.424286	9.883357
5/4/2018 20:30	41400	11.733443	17.392578	9.898928
5/4/2018 20:45	42300	11.730719	17.396912	9.905137
5/4/2018 21:00	43200	11.730728	17.421402	9.905116
5/4/2018 21:15	44100	11.730022	17.402679	9.906724
5/4/2018 21:30	45000	11.728791	17.380325	9.909531
5/4/2018 21:45	45900	11.728762	17.406982	9.909598
5/4/2018 22:00	46800	11.730078	17.381775	9.906598
5/4/2018 22:15	47700	11.731436	17.410599	9.903502
5/4/2018 22:30	48600	11.730719	17.417801	9.905137
5/4/2018 22:45	49500	11.731189	17.412766	9.904066
5/4/2018 23:00	50400	11.732742	17.431488	9.900525
5/4/2018 23:15	51300	11.733112	17.39978	9.899681
5/4/2018 23:30	52200	11.734009	17.395477	9.897638
5/4/2018 23:45	53100	11.737117	17.396194	9.890554
5/5/2018 0:00	54000	11.737002	17.403381	9.890815
5/5/2018 0:15	54900	11.735205	17.405548	9.894913
5/5/2018 0:30	55800	11.73894	17.391144	9.886398
5/5/2018 0:45	56700	11.736591	17.432205	9.891752
5/5/2018 1:00	57600	11.736488	17.396912	9.891987
5/5/2018 1:15	58500	11.737241	17.405548	9.890271
5/5/2018 1:30	59400	11.736669	17.396194	9.891576
5/5/2018 1:45	60300	11.734994	17.413483	9.895392
5/5/2018 2:00	61200	11.734919	17.404816	9.895564
5/5/2018 2:15	62100	11.732815	17.393295	9.90036
5/5/2018 2:30	63000	11.732407	17.38826	9.90129
5/5/2018 2:45	63900	11.732089	17.389694	9.902014
5/5/2018 3:00	64800	11.733371	17.399078	9.899093
5/5/2018 3:15	65700	11.731497	17.399078	9.903364
5/5/2018 3:30	66600	11.728273	17.400513	9.910711
5/5/2018 3:45	67500	11.72672	17.381775	9.914252
5/5/2018 4:00	68400	11.725874	17.396194	9.91618
5/5/2018 4:15	69300	11.723468	17.401947	9.921664
5/5/2018 4:30	70200	11.722015	17.404816	9.924974
5/5/2018 4:45	71100	11.719161	17.382492	9.93148
5/5/2018 5:00	72000	11.720327	17.40123	9.928823
5/5/2018 5:15	72900	11.717392	17.395477	9.935513
5/5/2018 5:30	73800	11.716374	17.407715	9.937833
5/5/2018 5:45	74700	11.716294	17.402679	9.938015

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/5/2018 6:00	75600	11.714108	17.387527	9.942997
5/5/2018 6:15	76500	11.712882	17.407715	9.945792
5/5/2018 6:30	77400	11.714184	17.377441	9.942825
5/5/2018 6:45	78300	11.711782	17.412033	9.948301
5/5/2018 7:00	79200	11.710936	17.392578	9.950229
5/5/2018 7:15	80100	11.7107	17.394028	9.950766
5/5/2018 7:30	81000	11.711055	17.417068	9.949958
5/5/2018 7:45	81900	11.711591	17.399078	9.948736
5/5/2018 8:00	82800	11.710703	17.388992	9.95076
5/5/2018 8:15	83700	11.710366	17.406265	9.951527
5/5/2018 8:30	84600	11.713491	17.399078	9.944404
5/5/2018 8:45	85500	11.714577	17.398346	9.94193
5/5/2018 9:00	86400	11.713156	17.411331	9.945168
5/5/2018 9:15	87300	11.717808	17.404816	9.934566
5/5/2018 9:30	88200	11.719027	17.406265	9.931787
5/5/2018 9:45	89100	11.719927	17.39978	9.929735
5/5/2018 10:00	90000	11.718754	17.404114	9.932409
5/5/2018 10:15	90900	11.72595	17.401947	9.916006
5/5/2018 10:30	91800	11.726046	17.422119	9.915789
5/5/2018 10:45	92700	11.73209	17.40123	9.902012
5/5/2018 11:00	93600	11.737317	17.400513	9.890098
5/5/2018 11:15	94500	11.740979	17.400513	9.88175
5/5/2018 11:30	95400	11.743582	17.406982	9.875818
5/5/2018 11:45	96300	11.747653	17.388992	9.866539
5/5/2018 12:00	97200	11.751077	17.413483	9.858735
5/5/2018 12:15	98100	11.756643	17.40123	9.846047
5/5/2018 12:30	99000	11.758392	17.393295	9.842061
5/5/2018 12:45	99900	11.760834	17.405548	9.836495
5/5/2018 13:00	100800	11.764758	17.422119	9.827551
5/5/2018 13:15	101700	11.769753	17.411331	9.816165
5/5/2018 13:30	102600	11.773104	17.39978	9.808529
5/5/2018 13:45	103500	11.771208	17.404816	9.81285
5/5/2018 14:00	104400	11.776667	17.4142	9.800407
5/5/2018 14:15	105300	11.774106	17.405548	9.806244
5/5/2018 14:30	106200	11.772704	17.401947	9.80944
5/5/2018 14:45	107100	11.771556	17.408432	9.812057
5/5/2018 15:00	108000	11.770083	17.386826	9.815413
5/5/2018 15:15	108900	11.764128	17.425018	9.828988
5/5/2018 15:30	109800	11.763102	17.383224	9.831326
5/5/2018 15:45	110700	11.76167	17.422119	9.83459
5/5/2018 16:00	111600	11.758301	17.395477	9.842269
5/5/2018 16:15	112500	11.754888	17.419952	9.850049

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/5/2018 16:30	113400	11.753062	17.397629	9.85421
5/5/2018 16:45	114300	11.752972	17.412033	9.854416
5/5/2018 17:00	115200	11.748421	17.422852	9.864789
5/5/2018 17:15	116100	11.745963	17.388992	9.870391
5/5/2018 17:30	117000	11.742486	17.406982	9.878316
5/5/2018 17:45	117900	11.740726	17.412766	9.882326
5/5/2018 18:00	118800	11.739445	17.39978	9.885248
5/5/2018 18:15	119700	11.737042	17.413483	9.890723
5/5/2018 18:30	120600	11.735053	17.419952	9.895258
5/5/2018 18:45	121500	11.734515	17.409882	9.896484
5/5/2018 19:00	122400	11.732407	17.381058	9.90129
5/5/2018 19:15	123300	11.731742	17.395477	9.902805
5/5/2018 19:30	124200	11.730663	17.398346	9.905264
5/5/2018 19:45	125100	11.726703	17.404114	9.914291
5/5/2018 20:00	126000	11.727313	17.387527	9.9129
5/5/2018 20:15	126900	11.726393	17.382492	9.914997
5/5/2018 20:30	127800	11.726399	17.405548	9.914982
5/5/2018 20:45	128700	11.727617	17.431488	9.912207
5/5/2018 21:00	129600	11.72672	17.394745	9.914252
5/5/2018 21:15	130500	11.724648	17.394028	9.918976
5/5/2018 21:30	131400	11.724987	17.405548	9.918201
5/5/2018 21:45	132300	11.725801	17.398346	9.916346
5/5/2018 22:00	133200	11.724249	17.42572	9.919884
5/5/2018 22:15	134100	11.723011	17.377441	9.922706
5/5/2018 22:30	135000	11.725222	17.404114	9.917666
5/5/2018 22:45	135900	11.726703	17.412033	9.914291
5/5/2018 23:00	136800	11.728144	17.406265	9.911007
5/5/2018 23:15	137700	11.729545	17.392578	9.907813
5/5/2018 23:30	138600	11.730728	17.419952	9.905116
5/5/2018 23:45	139500	11.731643	17.405548	9.903031
5/6/2018 0:00	140400	11.733112	17.40123	9.899681
5/6/2018 0:15	141300	11.733997	17.39978	9.897664
5/6/2018 0:30	142200	11.735047	17.402679	9.895271
5/6/2018 0:45	143100	11.738283	17.407715	9.887896
5/6/2018 1:00	144000	11.738745	17.411331	9.886844
5/6/2018 1:15	144900	11.740394	17.38826	9.883085
5/6/2018 1:30	145800	11.742248	17.395477	9.87886
5/6/2018 1:45	146700	11.745072	17.386826	9.872421
5/6/2018 2:00	147600	11.74404	17.408432	9.874775
5/6/2018 2:15	148500	11.744527	17.407715	9.873664
5/6/2018 2:30	149400	11.747063	17.412033	9.867885
5/6/2018 2:45	150300	11.745701	17.417068	9.870989

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/6/2018 3:00	151200	11.751077	17.411331	9.858735
5/6/2018 3:15	152100	11.750168	17.412033	9.860806
5/6/2018 3:30	153000	11.748238	17.405548	9.865207
5/6/2018 3:45	153900	11.750094	17.394028	9.860974
5/6/2018 4:00	154800	11.751924	17.386826	9.856805
5/6/2018 4:15	155700	11.751906	17.406265	9.856844
5/6/2018 4:30	156600	11.752433	17.401947	9.855644
5/6/2018 4:45	157500	11.753193	17.396194	9.853911
5/6/2018 5:00	158400	11.756047	17.38826	9.847405
5/6/2018 5:15	159300	11.754627	17.39978	9.850642
5/6/2018 5:30	160200	11.75654	17.396912	9.846282
5/6/2018 5:45	161100	11.75771	17.391144	9.843615
5/6/2018 6:00	162000	11.758453	17.403381	9.841922
5/6/2018 6:15	162900	11.758957	17.391861	9.840774
5/6/2018 6:30	163800	11.760696	17.387527	9.836809
5/6/2018 6:45	164700	11.762439	17.396912	9.832837
5/6/2018 7:00	165600	11.762556	17.38826	9.83257
5/6/2018 7:15	166500	11.764012	17.387527	9.829251
5/6/2018 7:30	167400	11.765753	17.405548	9.825284
5/6/2018 7:45	168300	11.768703	17.404114	9.818561
5/6/2018 8:00	169200	11.76878	17.393295	9.818384
5/6/2018 8:15	170100	11.77033	17.395477	9.81485
5/6/2018 8:30	171000	11.773677	17.430756	9.807222
5/6/2018 8:45	171900	11.778147	17.386826	9.797034
5/6/2018 9:00	172800	11.77821	17.368805	9.79689
5/6/2018 9:15	173700	11.769805	17.410599	9.816048
5/6/2018 9:30	174600	11.765046	17.412033	9.826895
5/6/2018 9:45	175500	11.76373	17.417801	9.829894
5/6/2018 10:00	176400	11.767177	17.406982	9.822039
5/6/2018 10:15	177300	11.771236	17.406265	9.812785
5/6/2018 10:30	178200	11.774712	17.396912	9.804864
5/6/2018 10:45	179100	11.781891	17.409882	9.7885
5/6/2018 11:00	180000	11.787085	17.404816	9.776662
5/6/2018 11:15	180900	11.791175	17.383957	9.767339
5/6/2018 11:30	181800	11.797808	17.378174	9.752221
5/6/2018 11:45	182700	11.80243	17.40123	9.741685
5/6/2018 12:00	183600	11.809402	17.416367	9.725793
5/6/2018 12:15	184500	11.812953	17.388992	9.7177
5/6/2018 12:30	185400	11.819704	17.394745	9.702312
5/6/2018 12:45	186300	11.825014	17.407715	9.690209
5/6/2018 13:00	187200	11.830721	17.390427	9.677201
5/6/2018 13:15	188100	11.834238	17.399078	9.669185

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/6/2018 13:30	189000	11.837905	17.388992	9.660827
5/6/2018 13:45	189900	11.84154	17.379608	9.65254
5/6/2018 14:00	190800	11.846068	17.379608	9.64222
5/6/2018 14:15	191700	11.849184	17.395477	9.635118
5/6/2018 14:30	192600	11.849299	17.408432	9.634855
5/6/2018 14:45	193500	11.855198	17.397629	9.62141
5/6/2018 15:00	194400	11.857681	17.378906	9.61575
5/6/2018 15:15	195300	11.858907	17.401947	9.612957
5/6/2018 15:30	196200	11.862864	17.407715	9.603938
5/6/2018 15:45	197100	11.861242	17.409882	9.607634
5/6/2018 16:00	198000	11.862	17.385376	9.605907
5/6/2018 16:15	198900	11.86163	17.400513	9.60675
5/6/2018 16:30	199800	11.862674	17.396194	9.604371
5/6/2018 16:45	200700	11.864985	17.411331	9.599104
5/6/2018 17:00	201600	11.865246	17.406265	9.598509
5/6/2018 17:15	202500	11.865756	17.40123	9.597345
5/6/2018 17:30	203400	11.863553	17.396912	9.602366
5/6/2018 17:45	204300	11.864031	17.407715	9.601278
5/6/2018 18:00	205200	11.863125	17.399078	9.603343
5/6/2018 18:15	206100	11.862707	17.376007	9.604295
5/6/2018 18:30	207000	11.858663	17.395477	9.613514
5/6/2018 18:45	207900	11.8562	17.377441	9.619126
5/6/2018 19:00	208800	11.855865	17.412033	9.619891
5/6/2018 19:15	209700	11.854466	17.394745	9.623078
5/6/2018 19:30	210600	11.850235	17.417801	9.632723
5/6/2018 19:45	211500	11.848883	17.40123	9.635805
5/6/2018 20:00	212400	11.848328	17.399078	9.637071
5/6/2018 20:15	213300	11.846055	17.410599	9.64225
5/6/2018 20:30	214200	11.84375	17.404816	9.647504
5/6/2018 20:45	215100	11.841462	17.404816	9.652719
5/6/2018 21:00	216000	11.840444	17.381775	9.655041
5/6/2018 21:15	216900	11.84089	17.400513	9.654023
5/6/2018 21:30	217800	11.838309	17.406982	9.659905
5/6/2018 21:45	218700	11.834375	17.409882	9.668872
5/6/2018 22:00	219600	11.835319	17.40123	9.666722
5/6/2018 22:15	220500	11.834238	17.411331	9.669185
5/6/2018 22:30	221400	11.834638	17.407715	9.668274
5/6/2018 22:45	222300	11.835615	17.402679	9.666046
5/6/2018 23:00	223200	11.833845	17.373856	9.67008
5/6/2018 23:15	224100	11.832746	17.396912	9.672586
5/6/2018 23:30	225000	11.835907	17.39978	9.66538
5/6/2018 23:45	225900	11.835002	17.401947	9.667443

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/7/2018 0:00	226800	11.835516	17.412033	9.666272
5/7/2018 0:15	227700	11.833254	17.407715	9.671428
5/7/2018 0:30	228600	11.834748	17.419235	9.668022
5/7/2018 0:45	229500	11.836187	17.419952	9.664742
5/7/2018 1:00	230400	11.833176	17.404114	9.671606
5/7/2018 1:15	231300	11.83908	17.403381	9.658149
5/7/2018 1:30	232200	11.836675	17.4142	9.66363
5/7/2018 1:45	233100	11.83567	17.383957	9.66592
5/7/2018 2:00	234000	11.835524	17.378906	9.666255
5/7/2018 2:15	234900	11.837856	17.393295	9.660937
5/7/2018 2:30	235800	11.835382	17.392578	9.666576
5/7/2018 2:45	236700	11.836485	17.401947	9.664063
5/7/2018 3:00	237600	11.839205	17.404816	9.657864
5/7/2018 3:15	238500	11.837018	17.400513	9.662848
5/7/2018 3:30	239400	11.835641	17.397629	9.665987
5/7/2018 3:45	240300	11.834496	17.408432	9.668598
5/7/2018 4:00	241200	11.83546	17.388992	9.6664
5/7/2018 4:15	242100	11.832746	17.391144	9.672586
5/7/2018 4:30	243000	11.831256	17.422119	9.675982
5/7/2018 4:45	243900	11.830028	17.430054	9.678782
5/7/2018 5:00	244800	11.832105	17.406982	9.674047
5/7/2018 5:15	245700	11.829237	17.409164	9.680584
5/7/2018 5:30	246600	11.826664	17.408432	9.686448
5/7/2018 5:45	247500	11.825689	17.390427	9.68867
5/7/2018 6:00	248400	11.826165	17.406265	9.687585
5/7/2018 6:15	249300	11.826587	17.443741	9.686625
5/7/2018 6:30	250200	11.825315	17.4142	9.689522
5/7/2018 6:45	251100	11.825191	17.397629	9.689805
5/7/2018 7:00	252000	11.824554	17.418518	9.691257
5/7/2018 7:15	252900	11.821436	17.4142	9.698365
5/7/2018 7:30	253800	11.822066	17.430054	9.696928
5/7/2018 7:45	254700	11.817297	17.393295	9.707799
5/7/2018 8:00	255600	11.819427	17.400513	9.702943
5/7/2018 8:15	256500	11.816334	17.391144	9.709994
5/7/2018 8:30	257400	11.818465	17.403381	9.705136
5/7/2018 8:45	258300	11.817613	17.415634	9.707079
5/7/2018 9:00	259200	11.814915	17.396912	9.713228
5/7/2018 9:15	260100	11.817119	17.416367	9.708205
5/7/2018 9:30	261000	11.818443	17.419952	9.705186
5/7/2018 9:45	261900	11.824091	17.394745	9.692313
5/7/2018 10:00	262800	11.82466	17.386093	9.691015
5/7/2018 10:15	263700	11.803012	17.37529	9.740359

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/7/2018 10:30	264600	11.523001	17.396194	10.378591
5/7/2018 10:45	265500	11.188426	17.403381	11.14119
5/7/2018 11:00	266400	10.968416	17.404816	11.64266
5/7/2018 11:15	267300	10.819531	17.438705	11.982014
5/7/2018 11:30	268200	10.705576	17.422852	12.241754
5/7/2018 11:45	269100	10.618887	17.403381	12.439344
5/7/2018 12:00	270000	10.547471	17.393295	12.602123
5/7/2018 12:15	270900	10.490367	17.378174	12.732282
5/7/2018 12:30	271800	10.441755	17.401947	12.843082
5/7/2018 12:45	272700	10.39902	17.404114	12.940489
5/7/2018 13:00	273600	10.365672	17.408432	13.0165
5/7/2018 13:15	274500	10.338746	17.387527	13.077872
5/7/2018 13:30	275400	10.311999	17.409882	13.138836
5/7/2018 13:45	276300	10.2896	17.417068	13.18989
5/7/2018 14:00	277200	10.264261	17.434357	13.247646
5/7/2018 14:15	278100	10.245704	17.4142	13.289945
5/7/2018 14:30	279000	10.229573	17.424286	13.326711
5/7/2018 14:45	279900	10.202916	17.417801	13.38747
5/7/2018 15:00	280800	10.176067	17.44014	13.448668
5/7/2018 15:15	281700	10.158709	17.42717	13.488234
5/7/2018 15:30	282600	10.14226	17.441574	13.525726
5/7/2018 15:45	283500	10.129658	17.445892	13.554449
5/7/2018 16:00	284400	10.120696	17.413483	13.574875
5/7/2018 16:15	285300	10.102121	17.422119	13.617213
5/7/2018 16:30	286200	10.0931	17.422852	13.637776
5/7/2018 16:45	287100	10.083779	17.419952	13.659019
5/7/2018 17:00	288000	10.065777	17.411331	13.700053
5/7/2018 17:15	288900	10.051215	17.409882	13.733244
5/7/2018 17:30	289800	10.042895	17.4142	13.752208
5/7/2018 17:45	290700	10.029408	17.418518	13.782948
5/7/2018 18:00	291600	10.017712	17.424286	13.809608
5/7/2018 18:15	292500	10.006034	17.4142	13.836226
5/7/2018 18:30	293400	9.994179	17.422119	13.863247
5/7/2018 18:45	294300	9.981356	17.402679	13.892475
5/7/2018 19:00	295200	9.968626	17.422119	13.92149
5/7/2018 19:15	296100	9.958804	17.417068	13.943877
5/7/2018 19:30	297000	9.947392	17.418518	13.969889
5/7/2018 19:45	297900	9.936884	17.42717	13.99384
5/7/2018 20:00	298800	9.926134	17.401947	14.018342
5/7/2018 20:15	299700	9.917908	17.416367	14.037092
5/7/2018 20:30	300600	9.907743	17.403381	14.060263
5/7/2018 20:45	301500	9.900556	17.402679	14.076643

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/7/2018 21:00	302400	9.89372	17.436523	14.092224
5/7/2018 21:15	303300	9.886147	17.422119	14.109487
5/7/2018 21:30	304200	9.881083	17.42067	14.121027
5/7/2018 21:45	305100	9.874745	17.417801	14.135473
5/7/2018 22:00	306000	9.868522	17.4142	14.149658
5/7/2018 22:15	306900	9.864228	17.390427	14.159445
5/7/2018 22:30	307800	9.859606	17.423569	14.169981
5/7/2018 22:45	308700	9.854126	17.422119	14.18247
5/7/2018 23:00	309600	9.853072	17.44014	14.184874
5/7/2018 23:15	310500	9.851761	17.42717	14.187862
5/7/2018 23:30	311400	9.847815	17.435806	14.196856
5/7/2018 23:45	312300	9.847239	17.399078	14.19817
5/8/2018 0:00	313200	9.84411	17.417068	14.205301
5/8/2018 0:15	314100	9.838377	17.435089	14.218368
5/8/2018 0:30	315000	9.834927	17.411331	14.226233
5/8/2018 0:45	315900	9.831129	17.425018	14.234888
5/8/2018 1:00	316800	9.83057	17.412766	14.236162
5/8/2018 1:15	317700	9.828289	17.434357	14.241362
5/8/2018 1:30	318600	9.827113	17.4142	14.244041
5/8/2018 1:45	319500	9.828799	17.431488	14.240198
5/8/2018 2:00	320400	9.826527	17.418518	14.245378
5/8/2018 2:15	321300	9.825128	17.39978	14.248568
5/8/2018 2:30	322200	9.821629	17.430054	14.256542
5/8/2018 2:45	323100	9.820953	17.395477	14.258081
5/8/2018 3:00	324000	9.820101	17.405548	14.260025
5/8/2018 3:15	324900	9.817124	17.431488	14.266809
5/8/2018 3:30	325800	9.819239	17.407715	14.26199
5/8/2018 3:45	326700	9.81816	17.438705	14.264448
5/8/2018 4:00	327600	9.81846	17.409882	14.263763
5/8/2018 4:15	328500	9.814829	17.402679	14.272041
5/8/2018 4:30	329400	9.814607	17.409164	14.272548
5/8/2018 4:45	330300	9.812785	17.423569	14.276699
5/8/2018 5:00	331200	9.810081	17.415634	14.282862
5/8/2018 5:15	332100	9.807581	17.426453	14.288561
5/8/2018 5:30	333000	9.802354	17.418518	14.300476
5/8/2018 5:45	333900	9.799323	17.42572	14.307384
5/8/2018 6:00	334800	9.793837	17.415634	14.319889
5/8/2018 6:15	335700	9.791115	17.430054	14.326094
5/8/2018 6:30	336600	9.792276	17.440857	14.323445
5/8/2018 6:45	337500	9.7895	17.434357	14.329773
5/8/2018 7:00	338400	9.789347	17.42572	14.330123
5/8/2018 7:15	339300	9.789873	17.430054	14.328923

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/8/2018 7:30	340200	9.790831	17.419952	14.32674
5/8/2018 7:45	341100	9.783989	17.408432	14.342335
5/8/2018 8:00	342000	9.784937	17.414917	14.340174
5/8/2018 8:15	342900	9.785272	17.403381	14.339411
5/8/2018 8:30	343800	9.789455	17.412033	14.329875
5/8/2018 8:45	344700	9.804505	17.422852	14.295571
5/8/2018 9:00	345600	9.81522	17.42067	14.271151
5/8/2018 9:15	346500	9.823709	17.407715	14.251801
5/8/2018 9:30	347400	9.827188	17.403381	14.243872
5/8/2018 9:45	348300	9.829166	17.430756	14.239362
5/8/2018 10:00	349200	9.834169	17.394745	14.227959
5/8/2018 10:15	350100	9.83599	17.412033	14.223808
5/8/2018 10:30	351000	9.83565	17.383957	14.224583
5/8/2018 10:45	351900	9.834204	17.416367	14.22788
5/8/2018 11:00	352800	9.836037	17.442307	14.223701
5/8/2018 11:15	353700	9.838276	17.430054	14.218598
5/8/2018 11:30	354600	9.841471	17.406982	14.211316
5/8/2018 11:45	355500	9.844083	17.435806	14.205362
5/8/2018 12:00	356400	9.849951	17.42717	14.191988
5/8/2018 12:15	357300	9.856119	17.427887	14.177928
5/8/2018 12:30	358200	9.863707	17.409164	14.160634
5/8/2018 12:45	359100	9.873397	17.422119	14.138546
5/8/2018 13:00	360000	9.879464	17.404816	14.124718
5/8/2018 13:15	360900	9.882247	17.413483	14.118374
5/8/2018 13:30	361800	9.884762	17.373138	14.112642
5/8/2018 13:45	362700	9.885414	17.415634	14.111156
5/8/2018 14:00	363600	9.889614	17.406982	14.101583
5/8/2018 14:15	364500	9.886988	17.415634	14.107569
5/8/2018 14:30	365400	9.888615	17.410599	14.103861
5/8/2018 14:45	366300	9.889795	17.401947	14.10117
5/8/2018 15:00	367200	9.891069	17.409882	14.098266
5/8/2018 15:15	368100	9.893586	17.409882	14.092529
5/8/2018 15:30	369000	9.896794	17.39978	14.085217
5/8/2018 15:45	369900	9.895405	17.389694	14.088384
5/8/2018 16:00	370800	9.896431	17.427887	14.086044
5/8/2018 16:15	371700	9.895863	17.416367	14.08734
5/8/2018 16:30	372600	9.892138	17.42717	14.095829
5/8/2018 16:45	373500	9.8892	17.428604	14.102526
5/8/2018 17:00	374400	9.887136	17.42717	14.107229
5/8/2018 17:15	375300	9.886495	17.421402	14.108693
5/8/2018 17:30	376200	9.876721	17.411331	14.130969
5/8/2018 17:45	377100	9.873799	17.38826	14.13763

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/8/2018 18:00	378000	9.866682	17.432922	14.153852
5/8/2018 18:15	378900	9.861374	17.400513	14.165951
5/8/2018 18:30	379800	9.856284	17.4142	14.177551
5/8/2018 18:45	380700	9.847881	17.40123	14.196705
5/8/2018 19:00	381600	9.84019	17.40123	14.214235
5/8/2018 19:15	382500	9.836569	17.422852	14.222489
5/8/2018 19:30	383400	9.833241	17.422119	14.230076
5/8/2018 19:45	384300	9.825981	17.416367	14.246622
5/8/2018 20:00	385200	9.81945	17.419952	14.261507
5/8/2018 20:15	386100	9.815062	17.4142	14.271511
5/8/2018 20:30	387000	9.807069	17.419235	14.289728
5/8/2018 20:45	387900	9.803946	17.409164	14.296848
5/8/2018 21:00	388800	9.800036	17.415634	14.305758
5/8/2018 21:15	389700	9.799896	17.432922	14.306078
5/8/2018 21:30	390600	9.794594	17.413483	14.318163
5/8/2018 21:45	391500	9.793065	17.406982	14.321648
5/8/2018 22:00	392400	9.792332	17.419235	14.323319
5/8/2018 22:15	393300	9.791666	17.421402	14.324837
5/8/2018 22:30	394200	9.790567	17.405548	14.327341
5/8/2018 22:45	395100	9.787214	17.434357	14.334984
5/8/2018 23:00	396000	9.783838	17.445175	14.342678
5/8/2018 23:15	396900	9.780069	17.434357	14.351269
5/8/2018 23:30	397800	9.768191	17.432205	14.378343
5/8/2018 23:45	398700	9.760934	17.405548	14.394884
5/9/2018 0:00	399600	9.755125	17.417801	14.408125
5/9/2018 0:15	400500	9.758081	17.434357	14.401386
5/9/2018 0:30	401400	9.755987	17.43364	14.406159
5/9/2018 0:45	402300	9.759328	17.430756	14.398545
5/9/2018 1:00	403200	9.75706	17.421402	14.403714
5/9/2018 1:15	404100	9.7567	17.44014	14.404535
5/9/2018 1:30	405000	9.758183	17.43364	14.401154
5/9/2018 1:45	405900	9.759512	17.424286	14.398126
5/9/2018 2:00	406800	9.759422	17.412766	14.39833
5/9/2018 2:15	407700	9.761411	17.417801	14.393798
5/9/2018 2:30	408600	9.7603	17.438705	14.39633
5/9/2018 2:45	409500	9.760226	17.415634	14.396498
5/9/2018 3:00	410400	9.759458	17.434357	14.39825
5/9/2018 3:15	411300	9.763399	17.39978	14.389265
5/9/2018 3:30	412200	9.765971	17.437973	14.383403
5/9/2018 3:45	413100	9.766262	17.402679	14.38274
5/9/2018 4:00	414000	9.767383	17.421402	14.380186
5/9/2018 4:15	414900	9.767383	17.404816	14.380186

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/9/2018 4:30	415800	9.772614	17.423569	14.368261
5/9/2018 4:45	416700	9.773898	17.39978	14.365335
5/9/2018 5:00	417600	9.773186	17.413483	14.366959
5/9/2018 5:15	418500	9.772432	17.422852	14.368675
5/9/2018 5:30	419400	9.766981	17.42572	14.381102
5/9/2018 5:45	420300	9.765247	17.4142	14.385053
5/9/2018 6:00	421200	9.763817	17.402679	14.388313
5/9/2018 6:15	422100	9.761411	17.416367	14.393798
5/9/2018 6:30	423000	9.758038	17.414917	14.401486
5/9/2018 6:45	423900	9.753777	17.435806	14.411199
5/9/2018 7:00	424800	9.752141	17.421402	14.414927
5/9/2018 7:15	425700	9.748464	17.429321	14.423307
5/9/2018 7:30	426600	9.746549	17.409882	14.427673
5/9/2018 7:45	427500	9.745625	17.42572	14.429777
5/9/2018 8:00	428400	9.743037	17.414917	14.435677
5/9/2018 8:15	429300	9.741972	17.419952	14.438105
5/9/2018 8:30	430200	9.738679	17.431488	14.44561
5/9/2018 8:45	431100	9.735995	17.42717	14.451727
5/9/2018 9:00	432000	9.735418	17.4142	14.453043
5/9/2018 9:15	432900	9.738285	17.404114	14.446508
5/9/2018 9:30	433800	9.737242	17.4142	14.448886
5/9/2018 9:45	434700	9.739687	17.422119	14.443313
5/9/2018 10:00	435600	9.737846	17.429321	14.447508
5/9/2018 10:15	436500	9.738936	17.417068	14.445024
5/9/2018 10:30	437400	9.738679	17.417801	14.44561
5/9/2018 10:45	438300	9.742097	17.431488	14.437819
5/9/2018 11:00	439200	9.742058	17.437256	14.437908
5/9/2018 11:15	440100	9.748376	17.397629	14.423508
5/9/2018 11:30	441000	9.748283	17.42067	14.423719
5/9/2018 11:45	441900	9.75446	17.434357	14.409639
5/9/2018 12:00	442800	9.753648	17.42067	14.411491
5/9/2018 12:15	443700	9.7603	17.418518	14.39633
5/9/2018 12:30	444600	9.762179	17.430054	14.392046
5/9/2018 12:45	445500	9.770245	17.413483	14.373663
5/9/2018 13:00	446400	9.775189	17.447342	14.362391
5/9/2018 13:15	447300	9.781606	17.432922	14.347767
5/9/2018 13:30	448200	9.789918	17.409164	14.328821
5/9/2018 13:45	449100	9.793596	17.4142	14.320436
5/9/2018 14:00	450000	9.797474	17.432922	14.311599
5/9/2018 14:15	450900	9.802429	17.406265	14.300304
5/9/2018 14:30	451800	9.806696	17.419235	14.290579
5/9/2018 14:45	452700	9.812099	17.445892	14.278265

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/9/2018 15:00	453600	9.813718	17.413483	14.274574
5/9/2018 15:15	454500	9.817813	17.430756	14.26524
5/9/2018 15:30	455400	9.817015	17.430054	14.267059
5/9/2018 15:45	456300	9.818738	17.408432	14.263131
5/9/2018 16:00	457200	9.821851	17.445892	14.256037
5/9/2018 16:15	458100	9.825953	17.426453	14.246687
5/9/2018 16:30	459000	9.821584	17.401947	14.256645
5/9/2018 16:45	459900	9.821356	17.413483	14.257164
5/9/2018 17:00	460800	9.820597	17.425018	14.258894
5/9/2018 17:15	461700	9.81685	17.447342	14.267435
5/9/2018 17:30	462600	9.815801	17.440857	14.269826
5/9/2018 17:45	463500	9.810808	17.430756	14.281206
5/9/2018 18:00	464400	9.806588	17.42572	14.290825
5/9/2018 18:15	465300	9.803901	17.42572	14.296949
5/9/2018 18:30	466200	9.799356	17.432922	14.30731
5/9/2018 18:45	467100	9.795789	17.428604	14.315439
5/9/2018 19:00	468000	9.790318	17.426453	14.327909
5/9/2018 19:15	468900	9.787368	17.439407	14.334634
5/9/2018 19:30	469800	9.778295	17.431488	14.355314
5/9/2018 19:45	470700	9.764005	17.421402	14.387885
5/9/2018 20:00	471600	9.750258	17.409882	14.419218
5/9/2018 20:15	472500	9.741584	17.40123	14.43899
5/9/2018 20:30	473400	9.737235	17.421402	14.448901
5/9/2018 20:45	474300	9.73171	17.422119	14.461494
5/9/2018 21:00	475200	9.729404	17.411331	14.466749
5/9/2018 21:15	476100	9.730227	17.408432	14.464874
5/9/2018 21:30	477000	9.726273	17.435806	14.473888
5/9/2018 21:45	477900	9.723249	17.443008	14.48078
5/9/2018 22:00	478800	9.718569	17.430756	14.491447
5/9/2018 22:15	479700	9.720201	17.40123	14.487728
5/9/2018 22:30	480600	9.717038	17.430756	14.494936
5/9/2018 22:45	481500	9.717325	17.426453	14.494282
5/9/2018 23:00	482400	9.715277	17.409164	14.498951
5/9/2018 23:15	483300	9.711836	17.434357	14.506794
5/9/2018 23:30	484200	9.712593	17.432205	14.505068
5/9/2018 23:45	485100	9.709798	17.426453	14.511439
5/10/2018 0:00	486000	9.71253	17.412033	14.505212
5/10/2018 0:15	486900	9.713727	17.419952	14.502483
5/10/2018 0:30	487800	9.712138	17.443008	14.506105
5/10/2018 0:45	488700	9.712138	17.430054	14.506105
5/10/2018 1:00	489600	9.714249	17.405548	14.501294
5/10/2018 1:15	490500	9.714419	17.408432	14.500905

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/10/2018 1:30	491400	9.71645	17.422852	14.496278
5/10/2018 1:45	492300	9.718895	17.422119	14.490704
5/10/2018 2:00	493200	9.72051	17.419235	14.487021
5/10/2018 2:15	494100	9.723904	17.409882	14.479288
5/10/2018 2:30	495000	9.728387	17.42067	14.469069
5/10/2018 2:45	495900	9.729275	17.42717	14.467045
5/10/2018 3:00	496800	9.733214	17.431488	14.458066
5/10/2018 3:15	497700	9.735077	17.413483	14.453821
5/10/2018 3:30	498600	9.736115	17.415634	14.451455
5/10/2018 3:45	499500	9.736041	17.412033	14.451622
5/10/2018 4:00	500400	9.737536	17.436523	14.448215
5/10/2018 4:15	501300	9.739693	17.415634	14.4433
5/10/2018 4:30	502200	9.742556	17.446609	14.436774
5/10/2018 4:45	503100	9.742888	17.42572	14.436016
5/10/2018 5:00	504000	9.746101	17.414917	14.428692
5/10/2018 5:15	504900	9.748316	17.432205	14.423645
5/10/2018 5:30	505800	9.750761	17.417801	14.418072
5/10/2018 5:45	506700	9.752568	17.413483	14.413952
5/10/2018 6:00	507600	9.751753	17.428604	14.415812
5/10/2018 6:15	508500	9.754673	17.408432	14.409155
5/10/2018 6:30	509400	9.755556	17.435806	14.407143
5/10/2018 6:45	510300	9.754522	17.42067	14.409498
5/10/2018 7:00	511200	9.750303	17.419235	14.419115
5/10/2018 7:15	512100	9.752376	17.42572	14.414392
5/10/2018 7:30	513000	9.752846	17.417801	14.413321
5/10/2018 7:45	513900	9.754128	17.430054	14.410398
5/10/2018 8:00	514800	9.758068	17.429321	14.401417
5/10/2018 8:15	515700	9.757385	17.392578	14.402973
5/10/2018 8:30	516600	9.7567	17.436523	14.404535
5/10/2018 8:45	517500	9.758355	17.440857	14.400763
5/10/2018 9:00	518400	9.75937	17.416367	14.398449
5/10/2018 9:15	519300	9.763315	17.419235	14.389458
5/10/2018 9:30	520200	9.766376	17.423569	14.382481
5/10/2018 9:45	521100	9.765267	17.406265	14.385007
5/10/2018 10:00	522000	9.762523	17.447342	14.391263
5/10/2018 10:15	522900	9.764479	17.439407	14.386805
5/10/2018 10:30	523800	9.768414	17.42067	14.377836
5/10/2018 10:45	524700	9.771523	17.423569	14.37075
5/10/2018 11:00	525600	9.776788	17.434357	14.358748
5/10/2018 11:15	526500	9.783099	17.405548	14.344362
5/10/2018 11:30	527400	9.787232	17.419235	14.334942
5/10/2018 11:45	528300	9.791579	17.426453	14.325034

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/10/2018 12:00	529200	9.794715	17.419952	14.317887
5/10/2018 12:15	530100	9.794395	17.421402	14.318615
5/10/2018 12:30	531000	9.798444	17.409164	14.309387
5/10/2018 12:45	531900	9.797685	17.42067	14.311118
5/10/2018 13:00	532800	9.799496	17.414917	14.30699
5/10/2018 13:15	533700	9.80479	17.434357	14.294922
5/10/2018 13:30	534600	9.815769	17.422119	14.269897
5/10/2018 13:45	535500	9.827188	17.466782	14.24387
5/10/2018 14:00	536400	9.829755	17.39978	14.23802
5/10/2018 14:15	537300	9.837793	17.414917	14.219698
5/10/2018 14:30	538200	9.842762	17.4142	14.208373
5/10/2018 14:45	539100	9.848121	17.435089	14.196159
5/10/2018 15:00	540000	9.848696	17.437256	14.194848
5/10/2018 15:15	540900	9.857519	17.409164	14.174737
5/10/2018 15:30	541800	9.857205	17.429321	14.175452
5/10/2018 15:45	542700	9.858316	17.414917	14.17292
5/10/2018 16:00	543600	9.860247	17.405548	14.16852
5/10/2018 16:15	544500	9.86453	17.421402	14.158758
5/10/2018 16:30	545400	9.861811	17.4142	14.164955
5/10/2018 16:45	546300	9.858076	17.437256	14.173468
5/10/2018 17:00	547200	9.858893	17.411331	14.171604
5/10/2018 17:15	548100	9.85804	17.417801	14.17355
5/10/2018 17:30	549000	9.855049	17.422119	14.180367
5/10/2018 17:45	549900	9.852615	17.424286	14.185914
5/10/2018 18:00	550800	9.849364	17.434357	14.193324
5/10/2018 18:15	551700	9.851021	17.440857	14.189548
5/10/2018 18:30	552600	9.849463	17.426453	14.193098
5/10/2018 18:45	553500	9.851551	17.413483	14.188339
5/10/2018 19:00	554400	9.850819	17.437973	14.19001
5/10/2018 19:15	555300	9.84853	17.44014	14.195227
5/10/2018 19:30	556200	9.84341	17.439407	14.206895
5/10/2018 19:45	557100	9.841491	17.439407	14.211271
5/10/2018 20:00	558000	9.83996	17.440857	14.21476
5/10/2018 20:15	558900	9.839484	17.4142	14.215844
5/10/2018 20:30	559800	9.83556	17.422119	14.224789
5/10/2018 20:45	560700	9.833149	17.429321	14.230284
5/10/2018 21:00	561600	9.833472	17.413483	14.229548
5/10/2018 21:15	562500	9.830111	17.423569	14.237209
5/10/2018 21:30	563400	9.827944	17.418518	14.242147
5/10/2018 21:45	564300	9.825663	17.421402	14.247348
5/10/2018 22:00	565200	9.821339	17.422852	14.257204
5/10/2018 22:15	566100	9.819975	17.437256	14.260311

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/10/2018 22:30	567000	9.818197	17.4142	14.264363
5/10/2018 22:45	567900	9.81535	17.407715	14.270855
5/10/2018 23:00	568800	9.809698	17.415634	14.283735
5/10/2018 23:15	569700	9.809361	17.414917	14.284506
5/10/2018 23:30	570600	9.811301	17.422119	14.280083
5/10/2018 23:45	571500	9.812302	17.416367	14.277802
5/11/2018 0:00	572400	9.807797	17.42067	14.288069
5/11/2018 0:15	573300	9.811274	17.424286	14.280146
5/11/2018 0:30	574200	9.812274	17.429321	14.277864
5/11/2018 0:45	575100	9.809186	17.431488	14.284903
5/11/2018 1:00	576000	9.807813	17.430756	14.288033
5/11/2018 1:15	576900	9.806696	17.412033	14.290579
5/11/2018 1:30	577800	9.809527	17.4142	14.284124
5/11/2018 1:45	578700	9.810159	17.42717	14.282686
5/11/2018 2:00	579600	9.809087	17.401947	14.28513
5/11/2018 2:15	580500	9.810948	17.422119	14.280886
5/11/2018 2:30	581400	9.815449	17.436523	14.270628
5/11/2018 2:45	582300	9.816871	17.422852	14.267387
5/11/2018 3:00	583200	9.815714	17.428604	14.270023
5/11/2018 3:15	584100	9.81953	17.419235	14.261327
5/11/2018 3:30	585000	9.81818	17.42067	14.264402
5/11/2018 3:45	585900	9.817273	17.416367	14.26647
5/11/2018 4:00	586800	9.816923	17.422119	14.267267
5/11/2018 4:15	587700	9.814022	17.411331	14.27388
5/11/2018 4:30	588600	9.815091	17.435806	14.271444
5/11/2018 4:45	589500	9.815617	17.421402	14.270246
5/11/2018 5:00	590400	9.816511	17.422852	14.268208
5/11/2018 5:15	591300	9.817426	17.422119	14.266123
5/11/2018 5:30	592200	9.818015	17.419952	14.264779
5/11/2018 5:45	593100	9.81607	17.426453	14.269213
5/11/2018 6:00	594000	9.815228	17.409164	14.271131
5/11/2018 6:15	594900	9.814847	17.400513	14.272
5/11/2018 6:30	595800	9.816422	17.417801	14.268412
5/11/2018 6:45	596700	9.812105	17.406265	14.27825
5/11/2018 7:00	597600	9.812152	17.404816	14.278143
5/11/2018 7:15	598500	9.810159	17.434357	14.282686
5/11/2018 7:30	599400	9.818389	17.410599	14.263927
5/11/2018 7:45	600300	9.848138	17.394745	14.196119
5/11/2018 8:00	601200	9.884222	17.404816	14.113873
5/11/2018 8:15	602100	9.864712	17.419952	14.158342
5/11/2018 8:30	603000	9.850492	17.423569	14.190752
5/11/2018 8:45	603900	9.84388	17.413483	14.205826

'2091E1				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/11/2018 9:00	604800	9.837041	17.450928	14.221413
5/11/2018 9:15	605700	9.818866	17.432205	14.26284
5/11/2018 9:30	606600	9.808545	17.443741	14.286364
5/11/2018 9:45	607500	9.807749	17.425018	14.288179
5/11/2018 10:00	608400	9.813477	17.421402	14.275124

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/27/2018 12:00	0	4.58429	14.122314	10.534164
4/27/2018 12:15	900	4.584675	14.062637	10.533287
4/27/2018 12:30	1800	4.583603	14.101944	10.535729
4/27/2018 12:45	2700	4.580366	14.239456	10.543108
4/27/2018 13:00	3600	4.579745	14.356583	10.544524
4/27/2018 13:15	4500	4.579902	14.420593	10.544167
4/27/2018 13:30	5400	4.576758	14.490402	10.551332
4/27/2018 13:45	6300	4.580319	14.428589	10.543215
4/27/2018 14:00	7200	4.580529	14.419144	10.542738
4/27/2018 14:15	8100	4.581723	14.272934	10.540015
4/27/2018 14:30	9000	4.583553	14.131775	10.535844
4/27/2018 14:45	9900	4.582156	14.090302	10.539029
4/27/2018 15:00	10800	4.583338	14.133957	10.536335
4/27/2018 15:15	11700	4.588105	14.047363	10.52547
4/27/2018 15:30	12600	4.588089	14.055359	10.525505
4/27/2018 15:45	13500	4.589488	14.139053	10.522317
4/27/2018 16:00	14400	4.588701	14.174698	10.524111
4/27/2018 16:15	15300	4.591542	14.27948	10.517634
4/27/2018 16:30	16200	4.592354	14.321671	10.515784
4/27/2018 16:45	17100	4.592378	14.448959	10.51573
4/27/2018 17:00	18000	4.59527	14.535492	10.509138
4/27/2018 17:15	18900	4.596466	14.494766	10.506412
4/27/2018 17:30	19800	4.596097	14.376953	10.507253
4/27/2018 17:45	20700	4.599165	14.136871	10.50026
4/27/2018 18:00	21600	4.596051	14.100494	10.507359
4/27/2018 18:15	22500	4.598401	14.124512	10.502002
4/27/2018 18:30	23400	4.595539	14.112869	10.508526
4/27/2018 18:45	24300	4.599154	14.087387	10.500284
4/27/2018 19:00	25200	4.597527	14.129593	10.503993
4/27/2018 19:15	26100	4.599244	14.218369	10.500079
4/27/2018 19:30	27000	4.597215	14.341309	10.504704
4/27/2018 19:45	27900	4.594147	14.484589	10.511698
4/27/2018 20:00	28800	4.59631	14.525314	10.506768
4/27/2018 20:15	29700	4.597476	14.508591	10.50411
4/27/2018 20:30	30600	4.596695	14.40097	10.50589
4/27/2018 20:45	31500	4.593292	14.405319	10.513646
4/27/2018 21:00	32400	4.593454	14.336227	10.513276
4/27/2018 21:15	33300	4.593256	14.208176	10.513728
4/27/2018 21:30	34200	4.591825	14.080109	10.51699
4/27/2018 21:45	35100	4.590661	14.032791	10.519644
4/27/2018 22:00	36000	4.589576	14.070648	10.522116
4/27/2018 22:15	36900	4.58589	14.132507	10.530517

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/27/2018 22:30	37800	4.586687	14.237289	10.528701
4/27/2018 22:45	38700	4.584239	14.286026	10.534281
4/27/2018 23:00	39600	4.583995	14.338409	10.534838
4/27/2018 23:15	40500	4.581435	14.494766	10.540672
4/27/2018 23:30	41400	4.581191	14.406769	10.541229
4/27/2018 23:45	42300	4.578129	14.376953	10.548206
4/28/2018 0:00	43200	4.580002	14.352219	10.543938
4/28/2018 0:15	44100	4.576861	14.287491	10.551097
4/28/2018 0:30	45000	4.579382	14.082291	10.545352
4/28/2018 0:45	45900	4.577604	14.123779	10.549404
4/28/2018 1:00	46800	4.575219	14.04808	10.55484
4/28/2018 1:15	47700	4.576816	14.043701	10.5512
4/28/2018 1:30	48600	4.575305	14.068466	10.554643
4/28/2018 1:45	49500	4.57644	14.171066	10.552057
4/28/2018 2:00	50400	4.577242	14.102676	10.550228
4/28/2018 2:15	51300	4.577604	14.321671	10.549404
4/28/2018 2:30	52200	4.576741	14.445328	10.551371
4/28/2018 2:45	53100	4.578156	14.498398	10.548147
4/28/2018 3:00	54000	4.58231	14.512222	10.538677
4/28/2018 3:15	54900	4.582686	14.350754	10.537821
4/28/2018 3:30	55800	4.582941	14.305664	10.537239
4/28/2018 3:45	56700	4.584365	14.184174	10.533994
4/28/2018 4:00	57600	4.58724	14.096848	10.527441
4/28/2018 4:15	58500	4.588934	14.022614	10.52358
4/28/2018 4:30	59400	4.591599	14.098297	10.517506
4/28/2018 4:45	60300	4.593761	14.111404	10.512576
4/28/2018 5:00	61200	4.594369	14.1194	10.511191
4/28/2018 5:15	62100	4.595322	14.190704	10.50902
4/28/2018 5:30	63000	4.594759	14.348587	10.510303
4/28/2018 5:45	63900	4.598369	14.335495	10.502075
4/28/2018 6:00	64800	4.601612	14.467865	10.494682
4/28/2018 6:15	65700	4.601315	14.392242	10.49536
4/28/2018 6:30	66600	4.602194	14.386414	10.493355
4/28/2018 6:45	67500	4.602699	14.224182	10.492204
4/28/2018 7:00	68400	4.604226	14.149246	10.488725
4/28/2018 7:15	69300	4.607674	14.133957	10.480865
4/28/2018 7:30	70200	4.603832	14.101944	10.489623
4/28/2018 7:45	71100	4.606874	14.125229	10.48269
4/28/2018 8:00	72000	4.605378	14.203079	10.486098
4/28/2018 8:15	72900	4.604993	14.230728	10.486976
4/28/2018 8:30	73800	4.603819	14.381317	10.489651
4/28/2018 8:45	74700	4.60437	14.388596	10.488396

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/28/2018 9:00	75600	4.602989	14.445328	10.491545
4/28/2018 9:15	76500	4.602697	14.406769	10.492208
4/28/2018 9:30	77400	4.605519	14.453323	10.485777
4/28/2018 9:45	78300	4.602283	14.387878	10.493153
4/28/2018 10:00	79200	4.601493	14.145599	10.494954
4/28/2018 10:15	80100	4.599905	14.082291	10.498572
4/28/2018 10:30	81000	4.601861	14.091019	10.494114
4/28/2018 10:45	81900	4.598363	14.121582	10.502089
4/28/2018 11:00	82800	4.597038	14.132507	10.505109
4/28/2018 11:15	83700	4.600599	14.169617	10.496992
4/28/2018 11:30	84600	4.597989	14.230011	10.50294
4/28/2018 11:45	85500	4.596955	14.222	10.505298
4/28/2018 12:00	86400	4.59545	14.317307	10.508727
4/28/2018 12:15	87300	4.597459	14.436584	10.504148
4/28/2018 12:30	88200	4.59623	14.352951	10.50695
4/28/2018 12:45	89100	4.59553	14.426422	10.508546
4/28/2018 13:00	90000	4.592753	14.3013	10.514874
4/28/2018 13:15	90900	4.596222	14.131775	10.506968
4/28/2018 13:30	91800	4.593802	14.13324	10.512484
4/28/2018 13:45	92700	4.600054	14.13031	10.498234
4/28/2018 14:00	93600	4.596847	14.094666	10.505543
4/28/2018 14:15	94500	4.599493	14.134674	10.499514
4/28/2018 14:30	95400	4.596695	14.104858	10.50589
4/28/2018 14:45	96300	4.598732	14.233658	10.501245
4/28/2018 15:00	97200	4.600483	14.181259	10.497256
4/28/2018 15:15	98100	4.601913	14.324585	10.493996
4/28/2018 15:30	99000	4.603908	14.235825	10.48945
4/28/2018 15:45	99900	4.607829	14.181259	10.480512
4/28/2018 16:00	100800	4.60883	14.091019	10.47823
4/28/2018 16:15	101700	4.608743	14.038635	10.47843
4/28/2018 16:30	102600	4.610905	14.083008	10.4735
4/28/2018 16:45	103500	4.614474	14.080841	10.465365
4/28/2018 17:00	104400	4.614777	14.121582	10.464675
4/28/2018 17:15	105300	4.616042	14.200912	10.461793
4/28/2018 17:30	106200	4.616647	14.258377	10.460412
4/28/2018 17:45	107100	4.619174	14.436584	10.454652
4/28/2018 18:00	108000	4.621828	14.348587	10.448605
4/28/2018 18:15	108900	4.620591	14.298401	10.451423
4/28/2018 18:30	109800	4.622876	14.202347	10.446215
4/28/2018 18:45	110700	4.620814	14.126678	10.450914
4/28/2018 19:00	111600	4.623053	14.016052	10.445812
4/28/2018 19:15	112500	4.623866	14.028442	10.443959

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/28/2018 19:30	113400	4.624621	14.073563	10.442237
4/28/2018 19:45	114300	4.625379	14.13031	10.440511
4/28/2018 20:00	115200	4.624866	14.283112	10.441678
4/28/2018 20:15	116100	4.62565	14.17981	10.439892
4/28/2018 20:30	117000	4.625584	14.244553	10.440043
4/28/2018 20:45	117900	4.625159	14.205994	10.441012
4/28/2018 21:00	118800	4.623963	14.216187	10.443737
4/28/2018 21:15	119700	4.621103	14.189255	10.450257
4/28/2018 21:30	120600	4.621072	14.13031	10.450326
4/28/2018 21:45	121500	4.621202	14.122314	10.450029
4/28/2018 22:00	122400	4.620681	14.128143	10.451219
4/28/2018 22:15	123300	4.615258	14.156525	10.463578
4/28/2018 22:30	124200	4.613108	14.229279	10.468479
4/28/2018 22:45	125100	4.611007	14.302032	10.473268
4/28/2018 23:00	126000	4.609303	14.40387	10.477154
4/28/2018 23:15	126900	4.608547	14.476593	10.478876
4/28/2018 23:30	127800	4.606161	14.515137	10.484314
4/28/2018 23:45	128700	4.60741	14.266388	10.481467
4/29/2018 0:00	129600	4.603755	14.24382	10.489797
4/29/2018 0:15	130500	4.600291	14.126678	10.497694
4/29/2018 0:30	131400	4.600105	14.091751	10.498117
4/29/2018 0:45	132300	4.599337	14.079376	10.499867
4/29/2018 1:00	133200	4.596643	14.085922	10.506008
4/29/2018 1:15	134100	4.595124	14.149979	10.50947
4/29/2018 1:30	135000	4.592175	14.240189	10.516193
4/29/2018 1:45	135900	4.590639	14.383499	10.519694
4/29/2018 2:00	136800	4.588407	14.427139	10.52478
4/29/2018 2:15	137700	4.588576	14.374039	10.524395
4/29/2018 2:30	138600	4.58726	14.439514	10.527394
4/29/2018 2:45	139500	4.587401	14.418411	10.527073
4/29/2018 3:00	140400	4.58965	14.300568	10.521948
4/29/2018 3:15	141300	4.587844	14.126678	10.526064
4/29/2018 3:30	142200	4.588408	14.044434	10.524778
4/29/2018 3:45	143100	4.590327	14.098297	10.520405
4/29/2018 4:00	144000	4.589888	14.06337	10.521405
4/29/2018 4:15	144900	4.586404	14.07283	10.529346
4/29/2018 4:30	145800	4.589179	14.121582	10.523022
4/29/2018 4:45	146700	4.587641	14.157959	10.526526
4/29/2018 5:00	147600	4.58727	14.246017	10.527371
4/29/2018 5:15	148500	4.585734	14.260559	10.530872
4/29/2018 5:30	149400	4.58436	14.302032	10.534006
4/29/2018 5:45	150300	4.588326	14.250381	10.524964

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/29/2018 6:00	151200	4.588077	14.187805	10.525533
4/29/2018 6:15	152100	4.58551	14.125229	10.531384
4/29/2018 6:30	153000	4.586746	14.094666	10.528566
4/29/2018 6:45	153900	4.587441	14.090302	10.526981
4/29/2018 7:00	154800	4.585119	14.065552	10.532275
4/29/2018 7:15	155700	4.582838	14.110672	10.537476
4/29/2018 7:30	156600	4.5829	14.135406	10.537333
4/29/2018 7:45	157500	4.579023	14.179077	10.546169
4/29/2018 8:00	158400	4.580408	14.304214	10.543013
4/29/2018 8:15	159300	4.575615	14.405319	10.553937
4/29/2018 8:30	160200	4.57475	14.401688	10.555909
4/29/2018 8:45	161100	4.574505	14.33403	10.556468
4/29/2018 9:00	162000	4.570207	14.17543	10.566265
4/29/2018 9:15	162900	4.569209	14.089569	10.56854
4/29/2018 9:30	163800	4.568177	14.06337	10.57089
4/29/2018 9:45	164700	4.568899	14.099762	10.569246
4/29/2018 10:00	165600	4.566533	14.069931	10.574639
4/29/2018 10:15	166500	4.564127	14.099762	10.580121
4/29/2018 10:30	167400	4.564149	14.158691	10.580072
4/29/2018 10:45	168300	4.561437	14.28093	10.586254
4/29/2018 11:00	169200	4.557917	14.386414	10.594276
4/29/2018 11:15	170100	4.554954	14.390045	10.601031
4/29/2018 11:30	171000	4.552153	14.398773	10.607414
4/29/2018 11:45	171900	4.548978	14.394409	10.614652
4/29/2018 12:00	172800	4.546391	14.406769	10.620547
4/29/2018 12:15	173700	4.54364	14.29985	10.626818
4/29/2018 12:30	174600	4.543763	14.165253	10.626537
4/29/2018 12:45	175500	4.542464	14.067734	10.629498
4/29/2018 13:00	176400	4.537451	14.070648	10.640924
4/29/2018 13:15	177300	4.535872	14.016785	10.644525
4/29/2018 13:30	178200	4.533593	14.073563	10.649718
4/29/2018 13:45	179100	4.535766	14.01825	10.644766
4/29/2018 14:00	180000	4.533906	14.06337	10.649004
4/29/2018 14:15	180900	4.533167	14.094666	10.65069
4/29/2018 14:30	181800	4.529643	14.168167	10.658722
4/29/2018 14:45	182700	4.528475	14.209625	10.661384
4/29/2018 15:00	183600	4.527986	14.308578	10.662498
4/29/2018 15:15	184500	4.527174	14.383499	10.664349
4/29/2018 15:30	185400	4.52281	14.064087	10.674296
4/29/2018 15:45	186300	4.521222	14.06337	10.677916
4/29/2018 16:00	187200	4.52225	14.046631	10.675572
4/29/2018 16:15	188100	4.521585	14.019714	10.677089

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/29/2018 16:30	189000	4.518511	13.981842	10.684094
4/29/2018 16:45	189900	4.520114	14.062637	10.680442
4/29/2018 17:00	190800	4.521904	14.01825	10.676361
4/29/2018 17:15	191700	4.522657	14.071381	10.674644
4/29/2018 17:30	192600	4.52036	14.139786	10.679882
4/29/2018 17:45	193500	4.518438	14.093216	10.684261
4/29/2018 18:00	194400	4.516872	14.271484	10.687831
4/29/2018 18:15	195300	4.516294	14.387878	10.689147
4/29/2018 18:30	196200	4.516347	14.339127	10.689028
4/29/2018 18:45	197100	4.515023	14.280197	10.692046
4/29/2018 19:00	198000	4.516079	14.358047	10.689638
4/29/2018 19:15	198900	4.51363	14.200912	10.695221
4/29/2018 19:30	199800	4.51562	14.064087	10.690685
4/29/2018 19:45	200700	4.515156	14.061188	10.691743
4/29/2018 20:00	201600	4.514751	14.056091	10.692664
4/29/2018 20:15	202500	4.511659	13.969482	10.699714
4/29/2018 20:30	203400	4.510756	14.00296	10.70177
4/29/2018 20:45	204300	4.508103	14.033524	10.707819
4/29/2018 21:00	205200	4.510246	14.067017	10.702933
4/29/2018 21:15	206100	4.505002	14.151428	10.714888
4/29/2018 21:30	207000	4.506643	14.221283	10.711145
4/29/2018 21:45	207900	4.501766	14.28093	10.722263
4/29/2018 22:00	208800	4.501251	14.283844	10.723436
4/29/2018 22:15	209700	4.49915	14.420593	10.728224
4/29/2018 22:30	210600	4.499132	14.383499	10.728266
4/29/2018 22:45	211500	4.494821	14.426422	10.738093
4/29/2018 23:00	212400	4.498834	14.424225	10.728945
4/29/2018 23:15	213300	4.495754	14.134674	10.735966
4/29/2018 23:30	214200	4.49428	14.017517	10.739326
4/29/2018 23:45	215100	4.495669	14.015335	10.736158
4/30/2018 0:00	216000	4.493409	14.005859	10.74131
4/30/2018 0:15	216900	4.492144	14.009506	10.744193
4/30/2018 0:30	217800	4.488294	14.091019	10.75297
4/30/2018 0:45	218700	4.489502	14.031342	10.750215
4/30/2018 1:00	219600	4.486208	14.089569	10.757724
4/30/2018 1:15	220500	4.485071	14.161606	10.760315
4/30/2018 1:30	221400	4.487621	14.3013	10.754502
4/30/2018 1:45	222300	4.484479	14.36821	10.761663
4/30/2018 2:00	223200	4.485219	14.420593	10.759977
4/30/2018 2:15	224100	4.484834	14.506409	10.760857
4/30/2018 2:30	225000	4.484519	14.471497	10.761573
4/30/2018 2:45	225900	4.485042	14.486771	10.760381

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/30/2018 3:00	226800	4.485542	14.385681	10.759241
4/30/2018 3:15	227700	4.486348	14.216187	10.757404
4/30/2018 3:30	228600	4.485688	14.208908	10.758909
4/30/2018 3:45	229500	4.484727	14.165253	10.761099
4/30/2018 4:00	230400	4.487148	14.085922	10.755581
4/30/2018 4:15	231300	4.484645	14.086655	10.761286
4/30/2018 4:30	232200	4.485912	14.009506	10.758399
4/30/2018 4:45	233100	4.48658	14.078659	10.756876
4/30/2018 5:00	234000	4.486833	14.071381	10.756299
4/30/2018 5:15	234900	4.487836	14.141968	10.754013
4/30/2018 5:30	235800	4.488778	14.256195	10.751866
4/30/2018 5:45	236700	4.493538	14.29985	10.741016
4/30/2018 6:00	237600	4.493497	14.477325	10.74111
4/30/2018 6:15	238500	4.49367	14.436584	10.740716
4/30/2018 6:30	239400	4.493592	14.470062	10.740892
4/30/2018 6:45	240300	4.496329	14.487503	10.734655
4/30/2018 7:00	241200	4.495436	14.446777	10.73669
4/30/2018 7:15	242100	4.495822	14.427856	10.73581
4/30/2018 7:30	243000	4.496704	14.312943	10.7338
4/30/2018 7:45	243900	4.497036	14.112137	10.733044
4/30/2018 8:00	244800	4.494716	14.096115	10.738331
4/30/2018 8:15	245700	4.497625	14.047363	10.7317
4/30/2018 8:30	246600	4.499801	14.060455	10.726741
4/30/2018 8:45	247500	4.498459	14.115768	10.7298
4/30/2018 9:00	248400	4.515227	14.248199	10.69158
4/30/2018 9:15	249300	4.491611	14.232193	10.745407
4/30/2018 9:30	250200	4.490564	14.282394	10.747794
4/30/2018 9:45	251100	4.490865	14.366776	10.747108
4/30/2018 10:00	252000	4.450936	14.332596	10.838119
4/30/2018 10:15	252900	4.421675	14.208908	10.904815
4/30/2018 10:30	253800	4.40182	14.064819	10.95007
4/30/2018 10:45	254700	4.384314	14.04808	10.989971
4/30/2018 11:00	255600	4.370692	14.00441	11.02102
4/30/2018 11:15	256500	4.353971	13.987671	11.059134
4/30/2018 11:30	257400	4.341401	13.970932	11.087784
4/30/2018 11:45	258300	4.330165	13.939636	11.113394
4/30/2018 12:00	259200	4.318716	13.936005	11.139489
4/30/2018 12:15	260100	4.307839	13.917068	11.164281
4/30/2018 12:30	261000	4.29994	13.997131	11.182285
4/30/2018 12:45	261900	4.29181	13.925064	11.200817
4/30/2018 13:00	262800	4.283485	13.922882	11.219791
4/30/2018 13:15	263700	4.274927	13.912704	11.239298

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
4/30/2018 13:30	264600	4.267078	13.944	11.257188
4/30/2018 13:45	265500	4.259303	13.908325	11.27491
4/30/2018 14:00	266400	4.254388	13.917786	11.286112
4/30/2018 14:15	267300	4.251472	13.927261	11.292758
4/30/2018 14:30	268200	4.244553	13.902496	11.30853
4/30/2018 14:45	269100	4.241588	13.881378	11.315288
4/30/2018 15:00	270000	4.235116	13.933075	11.330039
4/30/2018 15:15	270900	4.231427	13.904694	11.338449
4/30/2018 15:30	271800	4.22718	13.91925	11.348129
4/30/2018 15:45	272700	4.223251	13.960007	11.357084
4/30/2018 16:00	273600	4.22024	13.912704	11.363948
4/30/2018 16:15	274500	4.216106	13.909775	11.373369
4/30/2018 16:30	275400	4.212295	13.944	11.382057
4/30/2018 16:45	276300	4.211818	13.957092	11.383143
4/30/2018 17:00	277200	4.204897	13.954193	11.398918
4/30/2018 17:15	278100	4.202886	13.928711	11.403502
4/30/2018 17:30	279000	4.201903	13.95491	11.405743
4/30/2018 17:45	279900	4.197648	13.99205	11.415441
4/30/2018 18:00	280800	4.192441	14.006592	11.427311
4/30/2018 18:15	281700	4.190381	13.924347	11.432005
4/30/2018 18:30	282600	4.184917	13.938171	11.444459
4/30/2018 18:45	283500	4.18215	13.946915	11.450766
4/30/2018 19:00	284400	4.182332	13.965103	11.450351
4/30/2018 19:15	285300	4.17884	13.943283	11.458311
4/30/2018 19:30	286200	4.176093	13.950562	11.464571
4/30/2018 19:45	287100	4.175416	13.950562	11.466113
4/30/2018 20:00	288000	4.170911	13.990585	11.476382
4/30/2018 20:15	288900	4.166566	13.940353	11.486286
4/30/2018 20:30	289800	4.165553	13.976028	11.488596
4/30/2018 20:45	290700	4.164599	13.97966	11.490768
4/30/2018 21:00	291600	4.160324	13.943283	11.500514
4/30/2018 21:15	292500	4.156654	13.976028	11.508878
4/30/2018 21:30	293400	4.151862	13.944717	11.519802
4/30/2018 21:45	294300	4.150625	13.926529	11.522621
4/30/2018 22:00	295200	4.143737	13.960739	11.53832
4/30/2018 22:15	296100	4.143325	13.942551	11.539259
4/30/2018 22:30	297000	4.141113	13.927261	11.544301
4/30/2018 22:45	297900	4.135856	13.936722	11.556285
4/30/2018 23:00	298800	4.133085	13.962189	11.562599
4/30/2018 23:15	299700	4.130219	13.962921	11.569132
4/30/2018 23:30	300600	4.127194	14.000778	11.576027
4/30/2018 23:45	301500	4.127758	13.977493	11.574741

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/1/2018 0:00	302400	4.122118	13.933807	11.587598
5/1/2018 0:15	303300	4.120203	13.953461	11.591961
5/1/2018 0:30	304200	4.119579	13.927979	11.593384
5/1/2018 0:45	305100	4.116211	13.901047	11.601061
5/1/2018 1:00	306000	4.114486	13.927979	11.604992
5/1/2018 1:15	306900	4.111514	13.907593	11.611767
5/1/2018 1:30	307800	4.110563	13.927261	11.613934
5/1/2018 1:45	308700	4.10613	13.959274	11.624039
5/1/2018 2:00	309600	4.106701	13.941818	11.622738
5/1/2018 2:15	310500	4.104664	13.946915	11.62738
5/1/2018 2:30	311400	4.1038	13.924347	11.629349
5/1/2018 2:45	312300	4.100947	13.949829	11.635852
5/1/2018 3:00	313200	4.099149	13.918518	11.63995
5/1/2018 3:15	314100	4.100375	13.936722	11.637156
5/1/2018 3:30	315000	4.100627	13.933075	11.63658
5/1/2018 3:45	315900	4.101382	13.94545	11.63486
5/1/2018 4:00	316800	4.099873	13.941086	11.6383
5/1/2018 4:15	317700	4.097243	13.954193	11.644296
5/1/2018 4:30	318600	4.094931	13.970932	11.649565
5/1/2018 4:45	319500	4.096369	13.98111	11.646288
5/1/2018 5:00	320400	4.094718	13.91925	11.650051
5/1/2018 5:15	321300	4.095597	13.906876	11.648046
5/1/2018 5:30	322200	4.095865	13.92215	11.647436
5/1/2018 5:45	323100	4.093754	13.942551	11.652248
5/1/2018 6:00	324000	4.09395	13.927979	11.6518
5/1/2018 6:15	324900	4.094705	13.94545	11.65008
5/1/2018 6:30	325800	4.092301	13.901047	11.655559
5/1/2018 6:45	326700	4.09299	13.944717	11.653988
5/1/2018 7:00	327600	4.090538	13.932343	11.659578
5/1/2018 7:15	328500	4.090354	13.975296	11.659996
5/1/2018 7:30	329400	4.088589	13.96875	11.664021
5/1/2018 7:45	330300	4.085291	13.923615	11.671536
5/1/2018 8:00	331200	4.083248	13.9702	11.676193
5/1/2018 8:15	332100	4.085652	13.917068	11.670714
5/1/2018 8:30	333000	4.082875	13.921432	11.677044
5/1/2018 8:45	333900	4.081664	13.936722	11.679804
5/1/2018 9:00	334800	4.079195	13.893768	11.685431
5/1/2018 9:15	335700	4.078867	13.962921	11.68618
5/1/2018 9:30	336600	4.077154	13.969482	11.690084
5/1/2018 9:45	337500	4.07718	13.951996	11.690025
5/1/2018 10:00	338400	4.07601	13.905426	11.692692
5/1/2018 10:15	339300	4.072854	13.929428	11.699886

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/1/2018 10:30	340200	4.072279	13.93454	11.701196
5/1/2018 10:45	341100	4.071526	13.937439	11.702911
5/1/2018 11:00	342000	4.069887	13.933075	11.706649
5/1/2018 11:15	342900	4.066906	13.972382	11.713441
5/1/2018 11:30	343800	4.066895	13.994949	11.713469
5/1/2018 11:45	344700	4.064684	13.9935	11.718507
5/1/2018 12:00	345600	4.064573	13.928711	11.71876
5/1/2018 12:15	346500	4.066267	13.914154	11.7149
5/1/2018 12:30	347400	4.063272	13.930161	11.721726
5/1/2018 12:45	348300	4.063215	13.930893	11.721856
5/1/2018 13:00	349200	4.063351	13.971649	11.721545
5/1/2018 13:15	350100	4.059229	13.923615	11.730941
5/1/2018 13:30	351000	4.059977	13.946182	11.729236
5/1/2018 13:45	351900	4.060864	13.910507	11.727213
5/1/2018 14:00	352800	4.057019	13.965103	11.735977
5/1/2018 14:15	353700	4.055416	13.950562	11.739632
5/1/2018 14:30	354600	4.057127	13.975296	11.73573
5/1/2018 14:45	355500	4.053892	13.950562	11.743105
5/1/2018 15:00	356400	4.058198	13.904694	11.73329
5/1/2018 15:15	357300	4.054729	13.961472	11.741198
5/1/2018 15:30	358200	4.054601	13.917068	11.741488
5/1/2018 15:45	359100	4.053717	13.928711	11.743504
5/1/2018 16:00	360000	4.056918	13.917786	11.736208
5/1/2018 16:15	360900	4.055122	13.9702	11.740302
5/1/2018 16:30	361800	4.054601	13.959274	11.741488
5/1/2018 16:45	362700	4.054668	14.020432	11.741336
5/1/2018 17:00	363600	4.055494	13.981842	11.739454
5/1/2018 17:15	364500	4.054924	13.98111	11.740752
5/1/2018 17:30	365400	4.055629	13.944	11.739145
5/1/2018 17:45	366300	4.057825	13.941818	11.73414
5/1/2018 18:00	367200	4.057507	13.927261	11.734867
5/1/2018 18:15	368100	4.056114	13.943283	11.738041
5/1/2018 18:30	369000	4.056126	13.916336	11.738014
5/1/2018 18:45	369900	4.05687	13.890854	11.736318
5/1/2018 19:00	370800	4.054869	13.901047	11.740879
5/1/2018 19:15	371700	4.054913	13.95491	11.740778
5/1/2018 19:30	372600	4.054088	13.914871	11.742659
5/1/2018 19:45	373500	4.055184	13.943283	11.740161
5/1/2018 20:00	374400	4.054601	13.93454	11.741488
5/1/2018 20:15	375300	4.056497	13.941818	11.737168
5/1/2018 20:30	376200	4.055815	13.982574	11.738722
5/1/2018 20:45	377100	4.052252	13.962921	11.746843

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/1/2018 21:00	378000	4.055171	13.982574	11.74019
5/1/2018 21:15	378900	4.054092	13.957092	11.742649
5/1/2018 21:30	379800	4.051631	13.986206	11.748259
5/1/2018 21:45	380700	4.049839	13.936005	11.752343
5/1/2018 22:00	381600	4.0489	13.986938	11.754483
5/1/2018 22:15	382500	4.044504	13.946915	11.764503
5/1/2018 22:30	383400	4.046115	13.914871	11.760832
5/1/2018 22:45	384300	4.044261	13.930161	11.765059
5/1/2018 23:00	385200	4.042757	13.949097	11.768485
5/1/2018 23:15	386100	4.040714	13.962921	11.773143
5/1/2018 23:30	387000	4.038881	13.949097	11.777319
5/1/2018 23:45	387900	4.039079	13.910507	11.776869
5/2/2018 0:00	388800	4.03737	13.95491	11.780765
5/2/2018 0:15	389700	4.037668	13.938904	11.780086
5/2/2018 0:30	390600	4.03494	13.9207	11.786304
5/2/2018 0:45	391500	4.034251	13.944	11.787874
5/2/2018 1:00	392400	4.033029	13.93454	11.790659
5/2/2018 1:15	393300	4.030202	13.976761	11.797101
5/2/2018 1:30	394200	4.030846	13.951279	11.795635
5/2/2018 1:45	395100	4.031925	13.944	11.793175
5/2/2018 2:00	396000	4.031672	13.938171	11.793751
5/2/2018 2:15	396900	4.030766	13.944	11.795816
5/2/2018 2:30	397800	4.029702	13.933075	11.798243
5/2/2018 2:45	398700	4.028996	13.94545	11.79985
5/2/2018 3:00	399600	4.030449	13.952728	11.796539
5/2/2018 3:15	400500	4.032472	13.9702	11.791927
5/2/2018 3:30	401400	4.032035	13.949097	11.792923
5/2/2018 3:45	402300	4.030913	13.973114	11.795482
5/2/2018 4:00	403200	4.03103	13.95636	11.795216
5/2/2018 4:15	404100	4.031128	13.906876	11.794991
5/2/2018 4:30	405000	4.030623	13.906143	11.796142
5/2/2018 4:45	405900	4.030267	13.951279	11.796954
5/2/2018 5:00	406800	4.031837	13.953461	11.793375
5/2/2018 5:15	407700	4.03101	13.927261	11.79526
5/2/2018 5:30	408600	4.033298	13.932343	11.790044
5/2/2018 5:45	409500	4.033244	13.930161	11.790169
5/2/2018 6:00	410400	4.037102	13.941086	11.781374
5/2/2018 6:15	411300	4.032967	13.913422	11.790799
5/2/2018 6:30	412200	4.035013	13.94545	11.786136
5/2/2018 6:45	413100	4.035448	13.951279	11.785146
5/2/2018 7:00	414000	4.03501	13.942551	11.786142
5/2/2018 7:15	414900	4.032169	13.965836	11.792618

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/2/2018 7:30	415800	4.033864	13.967285	11.788756
5/2/2018 7:45	416700	4.033321	13.871933	11.789993
5/2/2018 8:00	417600	4.029053	13.93454	11.799721
5/2/2018 8:15	418500	4.030571	13.972382	11.79626
5/2/2018 8:30	419400	4.031488	13.948364	11.794171
5/2/2018 8:45	420300	4.033113	13.97821	11.790467
5/2/2018 9:00	421200	4.033378	13.970932	11.789863
5/2/2018 9:15	422100	4.031475	13.977493	11.794201
5/2/2018 9:30	423000	4.031711	13.978928	11.793662
5/2/2018 9:45	423900	4.033934	13.951279	11.788595
5/2/2018 10:00	424800	4.027777	13.917068	11.802629
5/2/2018 10:15	425700	4.027153	13.984039	11.80405
5/2/2018 10:30	426600	4.03064	13.931625	11.796103
5/2/2018 10:45	427500	4.026902	13.944717	11.804625
5/2/2018 11:00	428400	4.027336	13.927979	11.803635
5/2/2018 11:15	429300	4.02767	13.922882	11.802874
5/2/2018 11:30	430200	4.027034	13.964371	11.804322
5/2/2018 11:45	431100	4.024873	13.936005	11.809249
5/2/2018 12:00	432000	4.026206	13.939636	11.806211
5/2/2018 12:15	432900	4.022836	13.887939	11.813892
5/2/2018 12:30	433800	4.025356	13.928711	11.808147
5/2/2018 12:45	434700	4.025817	13.941086	11.807096
5/2/2018 13:00	435600	4.023484	13.939636	11.812415
5/2/2018 13:15	436500	4.027788	13.9207	11.802604
5/2/2018 13:30	437400	4.024925	13.962189	11.80913
5/2/2018 13:45	438300	4.027023	13.941818	11.804347
5/2/2018 14:00	439200	4.024663	13.966568	11.809727
5/2/2018 14:15	440100	4.023239	13.960007	11.812974
5/2/2018 14:30	441000	4.02323	13.905426	11.812994
5/2/2018 14:45	441900	4.026778	13.939636	11.804906
5/2/2018 15:00	442800	4.022773	13.962921	11.814034
5/2/2018 15:15	443700	4.024987	13.964371	11.80899
5/2/2018 15:30	444600	4.026276	13.948364	11.806051
5/2/2018 15:45	445500	4.027339	13.92215	11.803628
5/2/2018 16:00	446400	4.02323	13.98111	11.812994
5/2/2018 16:15	447300	4.024864	13.946915	11.80927
5/2/2018 16:30	448200	4.027151	13.941086	11.804056
5/2/2018 16:45	449100	4.027339	13.97821	11.803628
5/2/2018 17:00	450000	4.026397	13.962921	11.805775
5/2/2018 17:15	450900	4.027915	13.918518	11.802314
5/2/2018 17:30	451800	4.029613	13.880646	11.798444
5/2/2018 17:45	452700	4.029044	13.899582	11.799742

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/2/2018 18:00	453600	4.029228	13.847885	11.799322
5/2/2018 18:15	454500	4.03039	13.936722	11.796674
5/2/2018 18:30	455400	4.03039	13.915604	11.796673
5/2/2018 18:45	456300	4.029106	13.95636	11.7996
5/2/2018 19:00	457200	4.03076	13.954193	11.795831
5/2/2018 19:15	458100	4.031154	13.925797	11.794933
5/2/2018 19:30	459000	4.032354	13.925797	11.792196
5/2/2018 19:45	459900	4.031983	13.930161	11.793043
5/2/2018 20:00	460800	4.030192	13.967285	11.797125
5/2/2018 20:15	461700	4.03166	13.937439	11.793779
5/2/2018 20:30	462600	4.030907	13.965836	11.795496
5/2/2018 20:45	463500	4.029683	13.948364	11.798285
5/2/2018 21:00	464400	4.030584	13.933075	11.796232
5/2/2018 21:15	465300	4.031896	13.952728	11.793242
5/2/2018 21:30	466200	4.031134	13.906143	11.794978
5/2/2018 21:45	467100	4.02929	13.908325	11.79918
5/2/2018 22:00	468000	4.028286	13.894501	11.801468
5/2/2018 22:15	468900	4.0269	13.890137	11.804628
5/2/2018 22:30	469800	4.027459	13.905426	11.803354
5/2/2018 22:45	470700	4.025945	13.949829	11.806806
5/2/2018 23:00	471600	4.02291	13.946915	11.813723
5/2/2018 23:15	472500	4.022703	13.907593	11.814194
5/2/2018 23:30	473400	4.021566	13.964371	11.816786
5/2/2018 23:45	474300	4.022898	13.946182	11.813749
5/3/2018 0:00	475200	4.023547	13.970932	11.81227
5/3/2018 0:15	476100	4.019416	13.91124	11.821687
5/3/2018 0:30	477000	4.01548	13.937439	11.830658
5/3/2018 0:45	477900	4.015112	13.936722	11.831496
5/3/2018 1:00	478800	4.01853	13.938171	11.823707
5/3/2018 1:15	479700	4.0156	13.941818	11.830384
5/3/2018 1:30	480600	4.013146	13.947632	11.835978
5/3/2018 1:45	481500	4.015237	13.92215	11.831212
5/3/2018 2:00	482400	4.01434	13.950562	11.833257
5/3/2018 2:15	483300	4.013515	13.903961	11.835135
5/3/2018 2:30	484200	4.011946	13.900314	11.838714
5/3/2018 2:45	485100	4.016196	13.953461	11.829025
5/3/2018 3:00	486000	4.011821	13.923615	11.838998
5/3/2018 3:15	486900	4.014286	13.907593	11.833381
5/3/2018 3:30	487800	4.014265	13.924347	11.833427
5/3/2018 3:45	488700	4.012568	13.864655	11.837296
5/3/2018 4:00	489600	4.013894	13.936005	11.834272
5/3/2018 4:15	490500	4.014336	13.925064	11.833265

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/3/2018 4:30	491400	4.0141	13.917068	11.833803
5/3/2018 4:45	492300	4.01385	13.903961	11.834373
5/3/2018 5:00	493200	4.015556	13.968018	11.830485
5/3/2018 5:15	494100	4.014213	13.961472	11.833546
5/3/2018 5:30	495000	4.016064	13.982574	11.829328
5/3/2018 5:45	495900	4.017087	13.946182	11.826994
5/3/2018 6:00	496800	4.017629	13.907593	11.825761
5/3/2018 6:15	497700	4.017073	13.901779	11.827028
5/3/2018 6:30	498600	4.018657	13.921432	11.823416
5/3/2018 6:45	499500	4.019663	13.928711	11.821123
5/3/2018 7:00	500400	4.019408	13.950562	11.821705
5/3/2018 7:15	501300	4.021381	13.925064	11.817207
5/3/2018 7:30	502200	4.019829	13.951279	11.820745
5/3/2018 7:45	503100	4.018654	13.898865	11.823423
5/3/2018 8:00	504000	4.021318	13.859543	11.81735
5/3/2018 8:15	504900	4.023724	13.909775	11.811869
5/3/2018 8:30	505800	4.021615	13.931625	11.816674
5/3/2018 8:45	506700	4.019553	13.923615	11.821374
5/3/2018 9:00	507600	4.021569	13.898865	11.816779
5/3/2018 9:15	508500	4.02207	13.923615	11.815638
5/3/2018 9:30	509400	4.021376	13.884308	11.817219
5/3/2018 9:45	510300	4.022246	13.942551	11.815235
5/3/2018 10:00	511200	4.02352	13.930893	11.812333
5/3/2018 10:15	512100	4.023396	13.888657	11.812613
5/3/2018 10:30	513000	4.023149	13.889389	11.813178
5/3/2018 10:45	513900	4.023474	13.923615	11.812437
5/3/2018 11:00	514800	4.021739	13.921432	11.816393
5/3/2018 11:15	515700	4.023786	13.883575	11.811726
5/3/2018 11:30	516600	4.018819	13.902496	11.823048
5/3/2018 11:45	517500	4.021133	13.936005	11.817773
5/3/2018 12:00	518400	4.019293	13.960007	11.821967
5/3/2018 12:15	519300	4.018208	13.918518	11.82444
5/3/2018 12:30	520200	4.016757	13.927979	11.827747
5/3/2018 12:45	521100	4.018508	13.937439	11.823756
5/3/2018 13:00	522000	4.019207	13.887939	11.822163
5/3/2018 13:15	522900	4.017134	13.931625	11.826887
5/3/2018 13:30	523800	4.017629	13.901047	11.825761
5/3/2018 13:45	524700	4.016819	13.972382	11.827606
5/3/2018 14:00	525600	4.018142	13.9207	11.82459
5/3/2018 14:15	526500	4.017273	13.940353	11.826571
5/3/2018 14:30	527400	4.019915	13.923615	11.82055
5/3/2018 14:45	528300	4.019413	13.942551	11.821692

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/3/2018 15:00	529200	4.016804	13.933075	11.827641
5/3/2018 15:15	530100	4.018789	13.92215	11.823115
5/3/2018 15:30	531000	4.018789	13.946182	11.823115
5/3/2018 15:45	531900	4.019356	13.895218	11.821824
5/3/2018 16:00	532800	4.018963	13.842804	11.82272
5/3/2018 16:15	533700	4.01581	13.876297	11.829906
5/3/2018 16:30	534600	4.018093	13.935272	11.824703
5/3/2018 16:45	535500	4.017197	13.906876	11.826745
5/3/2018 17:00	536400	4.021751	13.890137	11.816363
5/3/2018 17:15	537300	4.020239	13.931625	11.819811
5/3/2018 17:30	538200	4.01999	13.9207	11.820377
5/3/2018 17:45	539100	4.019681	13.900314	11.821083
5/3/2018 18:00	540000	4.018217	13.889389	11.824421
5/3/2018 18:15	540900	4.01974	13.902496	11.82095
5/3/2018 18:30	541800	4.018663	13.907593	11.823403
5/3/2018 18:45	542700	4.017707	13.917786	11.825582
5/3/2018 19:00	543600	4.021492	13.933807	11.816955
5/3/2018 19:15	544500	4.019433	13.944	11.821648
5/3/2018 19:30	545400	4.019346	13.963638	11.821846
5/3/2018 19:45	546300	4.020612	13.897415	11.818961
5/3/2018 20:00	547200	4.019541	13.927979	11.821403
5/3/2018 20:15	548100	4.017397	13.937439	11.826288
5/3/2018 20:30	549000	4.019801	13.892303	11.82081
5/3/2018 20:45	549900	4.019417	13.946915	11.821685
5/3/2018 21:00	550800	4.019284	13.918518	11.821988
5/3/2018 21:15	551700	4.018085	13.885757	11.824719
5/3/2018 21:30	552600	4.016317	13.930893	11.82875
5/3/2018 21:45	553500	4.019536	13.960007	11.821413
5/3/2018 22:00	554400	4.01707	13.959274	11.827034
5/3/2018 22:15	555300	4.016756	13.901779	11.82775
5/3/2018 22:30	556200	4.016741	13.938171	11.827784
5/3/2018 22:45	557100	4.013972	13.916336	11.834095
5/3/2018 23:00	558000	4.014216	13.918518	11.833538
5/3/2018 23:15	558900	4.014213	13.961472	11.833546
5/3/2018 23:30	559800	4.014981	13.949097	11.831796
5/3/2018 23:45	560700	4.010911	13.936722	11.841071
5/4/2018 0:00	561600	4.01252	13.950562	11.837404
5/4/2018 0:15	562500	4.01207	13.895218	11.83843
5/4/2018 0:30	563400	4.008834	13.899582	11.845806
5/4/2018 0:45	564300	4.008446	13.896683	11.84669
5/4/2018 1:00	565200	4.007758	13.913422	11.84826
5/4/2018 1:15	566100	4.006174	13.933075	11.85187

MW-7				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/4/2018 1:30	567000	4.007634	13.93454	11.848542
5/4/2018 1:45	567900	4.008347	13.94545	11.846917
5/4/2018 2:00	568800	4.003758	13.912704	11.857375
5/4/2018 2:15	569700	4.00402	13.925064	11.856779
5/4/2018 2:30	570600	4.003643	13.889389	11.857638
5/4/2018 2:45	571500	4.004269	13.906143	11.856213
5/4/2018 3:00	572400	4.004334	13.927261	11.856063
5/4/2018 3:15	573300	4.005084	13.982574	11.854355
5/4/2018 3:30	574200	4.003704	13.984772	11.857499
5/4/2018 3:45	575100	4.003271	13.950562	11.858486
5/4/2018 4:00	576000	4.004473	13.930161	11.855746
5/4/2018 4:15	576900	4.002736	13.949097	11.859705
5/4/2018 4:30	577800	4.004517	13.96875	11.855647
5/4/2018 4:45	578700	4.004903	13.940353	11.854766
5/4/2018 5:00	579600	4.003252	13.984772	11.858529
5/4/2018 5:15	580500	4.003828	13.933807	11.857218
5/4/2018 5:30	581400	4.004827	13.923615	11.854939
5/4/2018 5:45	582300	4.005666	13.89595	11.853026
5/4/2018 6:00	583200	4.00326	13.936722	11.858511
5/4/2018 6:15	584100	4.004069	13.887939	11.856667
5/4/2018 6:30	585000	4.005848	13.898132	11.852612
5/4/2018 6:45	585900	4.008657	13.877747	11.84621
5/4/2018 7:00	586800	4.017962	13.914154	11.825001
5/4/2018 7:15	587700	4.043004	13.936005	11.767923
5/4/2018 7:30	588600	4.071791	13.944717	11.702309
5/4/2018 7:45	589500	4.09645	13.954193	11.646103

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/4/2018 9:00	0	5.090566	18.545151	9.650141
5/4/2018 9:15	900.001	5.085803	17.545334	9.660996
5/4/2018 9:30	1800.001	5.173419	17.470856	9.461291
5/4/2018 9:45	2700.001	5.169671	17.447708	9.469835
5/4/2018 10:00	3600.001	5.166655	17.473022	9.476711
5/4/2018 10:15	4500.001	5.163041	17.432526	9.484947
5/4/2018 10:30	5400.001	5.16336	17.446259	9.484221
5/4/2018 10:45	6300.001	5.161557	17.448425	9.488331
5/4/2018 11:00	7200.001	5.161978	17.413712	9.48737
5/4/2018 11:15	8100.001	5.158181	17.436142	9.496024
5/4/2018 11:30	9000.001	5.15804	17.415878	9.496347
5/4/2018 11:45	9900.001	5.161638	17.416611	9.488145
5/4/2018 12:00	10800.001	5.160681	17.438309	9.490327
5/4/2018 12:15	11700.001	5.162838	17.412262	9.485411
5/4/2018 12:30	12600.001	5.166281	17.412262	9.477563
5/4/2018 12:45	13500.001	5.165231	17.425293	9.479957
5/4/2018 13:00	14400.001	5.167954	17.449875	9.473749
5/4/2018 13:15	15300.001	5.170022	17.413712	9.469034
5/4/2018 13:30	16200.001	5.170924	17.428909	9.466979
5/4/2018 13:45	17100.001	5.1722	17.409363	9.46407
5/4/2018 14:00	18000.001	5.173584	17.413712	9.460917
5/4/2018 14:15	18900.001	5.176529	17.422394	9.454203
5/4/2018 14:30	19800.001	5.176193	17.412994	9.45497
5/4/2018 14:45	20700.001	5.180623	17.410812	9.444874
5/4/2018 15:00	21600.001	5.179112	17.41806	9.448317
5/4/2018 15:15	22500.001	5.179659	17.401428	9.44707
5/4/2018 15:30	23400.001	5.185169	17.412994	9.43451
5/4/2018 15:45	24300.001	5.184108	17.413712	9.43693
5/4/2018 16:00	25200.001	5.184732	17.405045	9.435506
5/4/2018 16:15	26100.001	5.185417	17.409363	9.433947
5/4/2018 16:30	27000.001	5.18784	17.406479	9.428422
5/4/2018 16:45	27900.001	5.187356	17.415161	9.429526
5/4/2018 17:00	28800.001	5.188684	17.404312	9.426498
5/4/2018 17:15	29700.001	5.190352	17.391296	9.422696
5/4/2018 17:30	30600.001	5.189333	17.396362	9.425018
5/4/2018 17:45	31500.001	5.189239	17.409363	9.425235
5/4/2018 18:00	32400.001	5.188816	17.420227	9.426198
5/4/2018 18:15	33300.001	5.191238	17.41806	9.420677
5/4/2018 18:30	34200.001	5.191037	17.41951	9.421135
5/4/2018 18:45	35100.001	5.191515	17.409363	9.420045
5/4/2018 19:00	36000.001	5.186512	17.433975	9.43145
5/4/2018 19:15	36900.001	5.185768	17.42601	9.433146

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/4/2018 19:30	37800.001	5.185497	17.403595	9.433763
5/4/2018 19:45	38700.001	5.181765	17.415161	9.442269
5/4/2018 20:00	39600.001	5.176297	17.423126	9.454732
5/4/2018 20:15	40500.001	5.175717	17.415878	9.456054
5/4/2018 20:30	41400.001	5.17706	17.410095	9.452993
5/4/2018 20:45	42300.001	5.172587	17.399261	9.463188
5/4/2018 21:00	43200.001	5.170429	17.401428	9.468108
5/4/2018 21:15	44100.001	5.170439	17.383331	9.468084
5/4/2018 21:30	45000.001	5.170723	17.402145	9.467438
5/4/2018 21:45	45900.001	5.168038	17.404312	9.473557
5/4/2018 22:00	46800.001	5.165504	17.42746	9.479335
5/4/2018 22:15	47700.001	5.165208	17.443375	9.480008
5/4/2018 22:30	48600.001	5.164372	17.412994	9.481913
5/4/2018 22:45	49500.001	5.165271	17.415878	9.479864
5/4/2018 23:00	50400.001	5.161906	17.402863	9.487534
5/4/2018 23:15	51300.001	5.160025	17.395645	9.491822
5/4/2018 23:30	52200.001	5.16178	17.415878	9.487822
5/4/2018 23:45	53100.001	5.158561	17.384064	9.495159
5/5/2018 0:00	54000.001	5.155466	17.413712	9.502213
5/5/2018 0:15	54900.001	5.153421	17.416611	9.506873
5/5/2018 0:30	55800.001	5.153381	17.407196	9.506966
5/5/2018 0:45	56700.001	5.151559	17.425293	9.511119
5/5/2018 1:00	57600.001	5.14868	17.436859	9.51768
5/5/2018 1:15	58500.001	5.151347	17.394196	9.511602
5/5/2018 1:30	59400.001	5.147412	17.416611	9.520571
5/5/2018 1:45	60300.001	5.149632	17.411545	9.515511
5/5/2018 2:00	61200.001	5.144175	17.422394	9.527949
5/5/2018 2:15	62100.001	5.140815	17.431808	9.535607
5/5/2018 2:30	63000.001	5.138581	17.394913	9.5407
5/5/2018 2:45	63900.001	5.137245	17.397095	9.543744
5/5/2018 3:00	64800.001	5.134737	17.393478	9.549462
5/5/2018 3:15	65700.001	5.131314	17.405762	9.557263
5/5/2018 3:30	66600.001	5.137432	17.392029	9.543318
5/5/2018 3:45	67500.001	5.136893	17.423126	9.544546
5/5/2018 4:00	68400.001	5.137324	17.405045	9.543564
5/5/2018 4:15	69300.001	5.13657	17.402863	9.545283
5/5/2018 4:30	70200.001	5.136299	17.391296	9.545901
5/5/2018 4:45	71100.001	5.138641	17.405762	9.540562
5/5/2018 5:00	72000.001	5.134968	17.423843	9.548935
5/5/2018 5:15	72900.001	5.138594	17.411545	9.540669
5/5/2018 5:30	73800.001	5.138427	17.399979	9.541051
5/5/2018 5:45	74700.001	5.137743	17.406479	9.542609

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/5/2018 6:00	75600.001	5.136784	17.421677	9.544795
5/5/2018 6:15	76500.001	5.137801	17.390579	9.542477
5/5/2018 6:30	77400.001	5.139031	17.378265	9.539673
5/5/2018 6:45	78300.001	5.139474	17.408646	9.538664
5/5/2018 7:00	79200.001	5.139638	17.388412	9.53829
5/5/2018 7:15	80100.001	5.141945	17.397812	9.533031
5/5/2018 7:30	81000.001	5.139068	17.405762	9.539589
5/5/2018 7:45	81900.001	5.141465	17.410812	9.534126
5/5/2018 8:00	82800.001	5.141417	17.420944	9.534235
5/5/2018 8:15	83700.001	5.139714	17.400711	9.538117
5/5/2018 8:30	84600.001	5.14101	17.402863	9.535162
5/5/2018 8:45	85500.001	5.141161	17.414429	9.534818
5/5/2018 9:00	86400.001	5.140718	17.390579	9.535828
5/5/2018 9:15	87300.001	5.142561	17.407928	9.531628
5/5/2018 9:30	88200.001	5.143219	17.428909	9.530128
5/5/2018 9:45	89100.001	5.145799	17.386963	9.524248
5/5/2018 10:00	90000.001	5.143804	17.412262	9.528795
5/5/2018 10:15	90900.001	5.147841	17.439758	9.519591
5/5/2018 10:30	91800.001	5.14649	17.411545	9.522673
5/5/2018 10:45	92700.001	5.145548	17.396362	9.524819
5/5/2018 11:00	93600.001	5.146418	17.402145	9.522836
5/5/2018 11:15	94500.001	5.145236	17.418777	9.525529
5/5/2018 11:30	95400.001	5.145833	17.406479	9.524169
5/5/2018 11:45	96300.001	5.146404	17.394196	9.522867
5/5/2018 12:00	97200.001	5.14923	17.402145	9.516426
5/5/2018 12:15	98100.001	5.147474	17.403595	9.520429
5/5/2018 12:30	99000.001	5.148718	17.403595	9.517594
5/5/2018 12:45	99900.001	5.146408	17.402145	9.52286
5/5/2018 13:00	100800.001	5.146896	17.392029	9.521746
5/5/2018 13:15	101700.001	5.146674	17.396362	9.522253
5/5/2018 13:30	102600.001	5.144673	17.376831	9.526813
5/5/2018 13:45	103500.001	5.144027	17.393478	9.528287
5/5/2018 14:00	104400.001	5.146984	17.403595	9.521546
5/5/2018 14:15	105300.001	5.145715	17.372482	9.524439
5/5/2018 14:30	106200.001	5.143098	17.378265	9.530403
5/5/2018 14:45	107100.001	5.144872	17.394913	9.526361
5/5/2018 15:00	108000.001	5.148208	17.412994	9.518756
5/5/2018 15:15	108900.001	5.143857	17.397812	9.528673
5/5/2018 15:30	109800.001	5.146163	17.410812	9.523417
5/5/2018 15:45	110700.001	5.1392	17.422394	9.539288
5/5/2018 16:00	111600.001	5.139919	17.411545	9.53765
5/5/2018 16:15	112500.001	5.138715	17.392029	9.540394

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/5/2018 16:30	113400.001	5.141615	17.392746	9.533783
5/5/2018 16:45	114300.001	5.142333	17.383331	9.532148
5/5/2018 17:00	115200.001	5.138268	17.38768	9.541412
5/5/2018 17:15	116100.001	5.137866	17.402145	9.54233
5/5/2018 17:30	117000.001	5.141261	17.386963	9.534592
5/5/2018 17:45	117900.001	5.141774	17.415161	9.533421
5/5/2018 18:00	118800.001	5.137104	17.378998	9.544066
5/5/2018 18:15	119700.001	5.138034	17.396362	9.541946
5/5/2018 18:30	120600.001	5.136704	17.406479	9.544977
5/5/2018 18:45	121500.001	5.137714	17.388412	9.542676
5/5/2018 19:00	122400.001	5.13707	17.392746	9.544144
5/5/2018 19:15	123300.001	5.138318	17.38768	9.5413
5/5/2018 19:30	124200.001	5.140855	17.399979	9.535516
5/5/2018 19:45	125100.001	5.137578	17.382614	9.542984
5/5/2018 20:00	126000.001	5.138349	17.399261	9.541228
5/5/2018 20:15	126900.001	5.136908	17.381897	9.544513
5/5/2018 20:30	127800.001	5.136843	17.413712	9.544661
5/5/2018 20:45	128700.001	5.138371	17.420227	9.541178
5/5/2018 21:00	129600.001	5.136689	17.404312	9.545012
5/5/2018 21:15	130500.001	5.135746	17.391296	9.547161
5/5/2018 21:30	131400.001	5.13614	17.405762	9.546262
5/5/2018 21:45	132300.001	5.139513	17.38623	9.538575
5/5/2018 22:00	133200.001	5.142075	17.408646	9.532736
5/5/2018 22:15	134100.001	5.141376	17.404312	9.534328
5/5/2018 22:30	135000.001	5.140626	17.374649	9.536037
5/5/2018 22:45	135900.001	5.136662	17.391296	9.545073
5/5/2018 23:00	136800.001	5.139072	17.402863	9.53958
5/5/2018 23:15	137700.001	5.140237	17.394913	9.536925
5/5/2018 23:30	138600.001	5.141214	17.386963	9.534698
5/5/2018 23:45	139500.001	5.141815	17.36525	9.533329
5/6/2018 0:00	140400.001	5.137497	17.38768	9.543169
5/6/2018 0:15	141300.001	5.138663	17.386963	9.540513
5/6/2018 0:30	142200.001	5.140624	17.385513	9.536042
5/6/2018 0:45	143100.001	5.137907	17.394196	9.542235
5/6/2018 1:00	144000.001	5.14445	17.392746	9.527322
5/6/2018 1:15	144900.001	5.149779	17.401428	9.515175
5/6/2018 1:30	145800.001	5.152374	17.391296	9.509261
5/6/2018 1:45	146700.001	5.146851	17.388412	9.52185
5/6/2018 2:00	147600.001	5.147376	17.384064	9.520653
5/6/2018 2:15	148500.001	5.148597	17.392029	9.51787
5/6/2018 2:30	149400.001	5.148208	17.405045	9.518756
5/6/2018 2:45	150300.001	5.143341	17.399979	9.52985

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/6/2018 3:00	151200.001	5.143399	17.384064	9.529718
5/6/2018 3:15	152100.001	5.14331	17.408646	9.529922
5/6/2018 3:30	153000.001	5.146459	17.398544	9.522742
5/6/2018 3:45	153900.001	5.150399	17.401428	9.513762
5/6/2018 4:00	154800.001	5.145379	17.385513	9.525205
5/6/2018 4:15	155700.001	5.149475	17.381897	9.515868
5/6/2018 4:30	156600.001	5.151059	17.408646	9.512258
5/6/2018 4:45	157500.001	5.149333	17.382614	9.516193
5/6/2018 5:00	158400.001	5.150056	17.410095	9.514544
5/6/2018 5:15	159300.001	5.152793	17.384064	9.508306
5/6/2018 5:30	160200.001	5.146938	17.390579	9.521651
5/6/2018 5:45	161100.001	5.151059	17.396362	9.512258
5/6/2018 6:00	162000.001	5.153699	17.392746	9.506241
5/6/2018 6:15	162900.001	5.154689	17.405762	9.503984
5/6/2018 6:30	163800.001	5.153116	17.394196	9.50757
5/6/2018 6:45	164700.001	5.172063	17.405762	9.464382
5/6/2018 7:00	165600.001	5.177575	17.397812	9.451819
5/6/2018 7:15	166500.001	5.174188	17.397095	9.45954
5/6/2018 7:30	167400.001	5.173811	17.376831	9.460398
5/6/2018 7:45	168300.001	5.17435	17.397812	9.459171
5/6/2018 8:00	169200.001	5.17373	17.399261	9.460583
5/6/2018 8:15	170100.001	5.172507	17.373215	9.46337
5/6/2018 8:30	171000.001	5.172343	17.391296	9.463744
5/6/2018 8:45	171900.001	5.17177	17.383331	9.465051
5/6/2018 9:00	172800.001	5.175764	17.393478	9.455948
5/6/2018 9:15	173700.001	5.178344	17.38913	9.450067
5/6/2018 9:30	174600.001	5.176535	17.378998	9.454191
5/6/2018 9:45	175500.001	5.176453	17.382614	9.454377
5/6/2018 10:00	176400.001	5.177423	17.402863	9.452168
5/6/2018 10:15	177300.001	5.177575	17.405762	9.451819
5/6/2018 10:30	178200.001	5.179232	17.415161	9.448044
5/6/2018 10:45	179100.001	5.178809	17.389847	9.449007
5/6/2018 11:00	180000.001	5.183148	17.392029	9.439116
5/6/2018 11:15	180900.001	5.184486	17.374649	9.436067
5/6/2018 11:30	181800.001	5.182217	17.390579	9.44124
5/6/2018 11:45	182700.001	5.181885	17.378265	9.441996
5/6/2018 12:00	183600.001	5.182956	17.399979	9.439555
5/6/2018 12:15	184500.001	5.184703	17.397095	9.435574
5/6/2018 12:30	185400.001	5.18314	17.416611	9.439136
5/6/2018 12:45	186300.001	5.184325	17.38768	9.436434
5/6/2018 13:00	187200.001	5.185808	17.409363	9.433054
5/6/2018 13:15	188100.001	5.186197	17.405762	9.432167

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/6/2018 13:30	189000.001	5.186698	17.379715	9.431026
5/6/2018 13:45	189900.001	5.190335	17.38623	9.422735
5/6/2018 14:00	190800.001	5.191118	17.390579	9.420951
5/6/2018 14:15	191700.001	5.191359	17.375381	9.420402
5/6/2018 14:30	192600.001	5.194489	17.394196	9.413266
5/6/2018 14:45	193500.001	5.193759	17.396362	9.414931
5/6/2018 15:00	194400.001	5.195747	17.363083	9.4104
5/6/2018 15:15	195300.001	5.194249	17.368881	9.413815
5/6/2018 15:30	196200.001	5.193424	17.397095	9.415694
5/6/2018 15:45	197100.001	5.196201	17.394913	9.409366
5/6/2018 16:00	198000.001	5.195703	17.404312	9.410501
5/6/2018 16:15	198900.001	5.194999	17.399979	9.412106
5/6/2018 16:30	199800.001	5.195795	17.381165	9.410291
5/6/2018 16:45	200700.001	5.195007	17.392746	9.412087
5/6/2018 17:00	201600.001	5.195567	17.402145	9.41081
5/6/2018 17:15	202500.001	5.197129	17.360199	9.407249
5/6/2018 17:30	203400.001	5.192501	17.38623	9.417799
5/6/2018 17:45	204300.001	5.192065	17.360199	9.418792
5/6/2018 18:00	205200.001	5.191172	17.391296	9.420829
5/6/2018 18:15	206100.001	5.188075	17.381165	9.427888
5/6/2018 18:30	207000.001	5.191726	17.408646	9.419566
5/6/2018 18:45	207900.001	5.192026	17.377548	9.418882
5/6/2018 19:00	208800.001	5.189499	17.377548	9.424642
5/6/2018 19:15	209700.001	5.188895	17.391296	9.426018
5/6/2018 19:30	210600.001	5.188895	17.395645	9.426018
5/6/2018 19:45	211500.001	5.188115	17.412262	9.427795
5/6/2018 20:00	212400.001	5.18521	17.383331	9.434418
5/6/2018 20:15	213300.001	5.185806	17.38913	9.43306
5/6/2018 20:30	214200.001	5.182535	17.365982	9.440514
5/6/2018 20:45	215100.001	5.181926	17.393478	9.441903
5/6/2018 21:00	216000.001	5.178485	17.374649	9.449745
5/6/2018 21:15	216900.001	5.179742	17.393478	9.446879
5/6/2018 21:30	217800.001	5.176333	17.399261	9.45465
5/6/2018 21:45	218700.001	5.175169	17.377548	9.457304
5/6/2018 22:00	219600.001	5.173541	17.397095	9.461015
5/6/2018 22:15	220500.001	5.174147	17.392746	9.459633
5/6/2018 22:30	221400.001	5.177805	17.370316	9.451296
5/6/2018 22:45	222300.001	5.176178	17.392029	9.455006
5/6/2018 23:00	223200.001	5.17369	17.420227	9.460674
5/6/2018 23:15	224100.001	5.175775	17.385513	9.455923
5/6/2018 23:30	225000.001	5.173142	17.3573	9.461923
5/6/2018 23:45	225900.001	5.173306	17.394196	9.461552

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/7/2018 0:00	226800.001	5.16995	17.389847	9.469198
5/7/2018 0:15	227700.001	5.16812	17.400711	9.473371
5/7/2018 0:30	228600.001	5.167159	17.377548	9.475561
5/7/2018 0:45	229500.001	5.167954	17.397812	9.473748
5/7/2018 1:00	230400.001	5.168693	17.392746	9.472065
5/7/2018 1:15	231300.001	5.170691	17.407196	9.467512
5/7/2018 1:30	232200.001	5.168569	17.385513	9.472347
5/7/2018 1:45	233100.001	5.166953	17.392029	9.47603
5/7/2018 2:00	234000.001	5.16926	17.410095	9.470772
5/7/2018 2:15	234900.001	5.167604	17.392746	9.474546
5/7/2018 2:30	235800.001	5.167199	17.397812	9.47547
5/7/2018 2:45	236700.001	5.167342	17.406479	9.475143
5/7/2018 3:00	237600.001	5.166158	17.371048	9.477843
5/7/2018 3:15	238500.001	5.166199	17.378998	9.47775
5/7/2018 3:30	239400.001	5.161419	17.412994	9.488645
5/7/2018 3:45	240300.001	5.160353	17.392029	9.491074
5/7/2018 4:00	241200.001	5.162059	17.388412	9.487186
5/7/2018 4:15	242100.001	5.162334	17.415161	9.486558
5/7/2018 4:30	243000.001	5.160307	17.380447	9.491179
5/7/2018 4:45	243900.001	5.161459	17.378998	9.488553
5/7/2018 5:00	244800.001	5.157417	17.365982	9.497766
5/7/2018 5:15	245700.001	5.15648	17.398544	9.499901
5/7/2018 5:30	246600.001	5.158199	17.38623	9.495984
5/7/2018 5:45	247500.001	5.155345	17.397812	9.502488
5/7/2018 6:00	248400.001	5.152888	17.383331	9.508088
5/7/2018 6:15	249300.001	5.149583	17.386963	9.515621
5/7/2018 6:30	250200.001	5.147564	17.368881	9.520225
5/7/2018 6:45	251100.001	5.145718	17.38768	9.524431
5/7/2018 7:00	252000.001	5.143219	17.376099	9.530128
5/7/2018 7:15	252900.001	5.144226	17.368881	9.527833
5/7/2018 7:30	253800.001	5.143364	17.376099	9.529797
5/7/2018 7:45	254700.001	5.142602	17.395645	9.531534
5/7/2018 8:00	255600.001	5.138806	17.384064	9.540187
5/7/2018 8:15	256500.001	5.142122	17.383331	9.532627
5/7/2018 8:30	257400.001	5.139596	17.397095	9.538386
5/7/2018 8:45	258300.001	5.137232	17.376831	9.543774
5/7/2018 9:00	259200.001	5.137696	17.385513	9.542717
5/7/2018 9:15	260100.001	5.168851	17.410095	9.471704
5/7/2018 9:30	261000.001	5.165544	17.397095	9.479242
5/7/2018 9:45	261900.001	5.161006	17.402145	9.489586
5/7/2018 10:00	262800.001	5.161603	17.388412	9.488225
5/7/2018 10:15	263700.001	5.159937	17.384781	9.492023

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/7/2018 10:30	264600.001	5.155749	17.384781	9.501567
5/7/2018 10:45	265500.001	5.160307	17.384064	9.491179
5/7/2018 11:00	266400.001	5.157865	17.384781	9.496746
5/7/2018 11:15	267300.001	5.159085	17.371048	9.493965
5/7/2018 11:30	268200.001	5.161562	17.378998	9.488317
5/7/2018 11:45	269100.001	5.16178	17.367432	9.487821
5/7/2018 12:00	270000.001	5.162181	17.366699	9.486908
5/7/2018 12:15	270900.001	5.162416	17.362366	9.486372
5/7/2018 12:30	271800.001	5.167672	17.35585	9.474393
5/7/2018 12:45	272700.001	5.167995	17.392029	9.473655
5/7/2018 13:00	273600.001	5.166912	17.392029	9.476124
5/7/2018 13:15	274500.001	5.168612	17.377548	9.472248
5/7/2018 13:30	275400.001	5.168966	17.38913	9.471443
5/7/2018 13:45	276300.001	5.172627	17.38623	9.463097
5/7/2018 14:00	277200.001	5.169341	17.384064	9.470588
5/7/2018 14:15	278100.001	5.172767	17.377548	9.462779
5/7/2018 14:30	279000.001	5.174992	17.372482	9.457708
5/7/2018 14:45	279900.001	5.175324	17.389847	9.45695
5/7/2018 15:00	280800.001	5.172384	17.381165	9.463651
5/7/2018 15:15	281700.001	5.177886	17.394196	9.451111
5/7/2018 15:30	282600.001	5.175335	17.353683	9.456925
5/7/2018 15:45	283500.001	5.178038	17.391296	9.450765
5/7/2018 16:00	284400.001	5.179403	17.397812	9.447653
5/7/2018 16:15	285300.001	5.180018	17.375381	9.446252
5/7/2018 16:30	286200.001	5.178089	17.379715	9.450648
5/7/2018 16:45	287100.001	5.178344	17.362366	9.450067
5/7/2018 17:00	288000.001	5.176458	17.373215	9.454365
5/7/2018 17:15	288900.001	5.176827	17.366699	9.453525
5/7/2018 17:30	289800.001	5.17841	17.38768	9.449917
5/7/2018 17:45	290700.001	5.177038	17.373215	9.453045
5/7/2018 18:00	291600.001	5.174837	17.360199	9.458061
5/7/2018 18:15	292500.001	5.173995	17.376099	9.459979
5/7/2018 18:30	293400.001	5.173095	17.394913	9.462031
5/7/2018 18:45	294300.001	5.169526	17.369598	9.470167
5/7/2018 19:00	295200.001	5.169499	17.409363	9.470226
5/7/2018 19:15	296100.001	5.168351	17.391296	9.472844
5/7/2018 19:30	297000.001	5.162799	17.373932	9.485499
5/7/2018 19:45	297900.001	5.160803	17.397095	9.490048
5/7/2018 20:00	298800.001	5.160594	17.371048	9.490523
5/7/2018 20:15	299700.001	5.158828	17.386963	9.494551
5/7/2018 20:30	300600.001	5.158659	17.397095	9.494936
5/7/2018 20:45	301500.001	5.15327	17.381897	9.507219

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/7/2018 21:00	302400.001	5.1502	17.394196	9.514216
5/7/2018 21:15	303300.001	5.148409	17.403595	9.518297
5/7/2018 21:30	304200.001	5.1478	17.389847	9.519685
5/7/2018 21:45	305100.001	5.143487	17.383331	9.529517
5/7/2018 22:00	306000.001	5.140287	17.345718	9.536811
5/7/2018 22:15	306900.001	5.140486	17.396362	9.536358
5/7/2018 22:30	307800.001	5.138515	17.388412	9.540849
5/7/2018 22:45	308700.001	5.13814	17.391296	9.541704
5/7/2018 23:00	309600.001	5.136119	17.372482	9.54631
5/7/2018 23:15	310500.001	5.13509	17.373932	9.548656
5/7/2018 23:30	311400.001	5.131945	17.368149	9.555825
5/7/2018 23:45	312300.001	5.1293	17.373932	9.561854
5/8/2018 0:00	313200.001	5.126133	17.404312	9.569072
5/8/2018 0:15	314100.001	5.125146	17.369598	9.571321
5/8/2018 0:30	315000.001	5.124425	17.384781	9.572966
5/8/2018 0:45	315900.001	5.125226	17.386963	9.57114
5/8/2018 1:00	316800.001	5.125544	17.394196	9.570415
5/8/2018 1:15	317700.001	5.126764	17.378265	9.567635
5/8/2018 1:30	318600.001	5.12551	17.389847	9.570493
5/8/2018 1:45	319500.001	5.123628	17.362366	9.574782
5/8/2018 2:00	320400.001	5.125722	17.379715	9.570008
5/8/2018 2:15	321300.001	5.125816	17.397812	9.569794
5/8/2018 2:30	322200.001	5.126261	17.36525	9.56878
5/8/2018 2:45	323100.001	5.127274	17.421677	9.566472
5/8/2018 3:00	324000.001	5.125041	17.410812	9.57156
5/8/2018 3:15	324900.001	5.125173	17.373215	9.571259
5/8/2018 3:30	325800.001	5.123455	17.38623	9.575176
5/8/2018 3:45	326700.001	5.121121	17.362366	9.580495
5/8/2018 4:00	327600.001	5.121245	17.38768	9.580213
5/8/2018 4:15	328500.001	5.121264	17.364532	9.580169
5/8/2018 4:30	329400.001	5.122875	17.376831	9.576499
5/8/2018 4:45	330300.001	5.122971	17.385513	9.576279
5/8/2018 5:00	331200.001	5.121954	17.376831	9.578597
5/8/2018 5:15	332100.001	5.121205	17.397812	9.580305
5/8/2018 5:30	333000.001	5.121717	17.365982	9.579138
5/8/2018 5:45	333900.001	5.119218	17.352234	9.584832
5/8/2018 6:00	334800.001	5.117637	17.384781	9.588437
5/8/2018 6:15	335700.001	5.114549	17.376099	9.595475
5/8/2018 6:30	336600.001	5.114785	17.389847	9.594938
5/8/2018 6:45	337500.001	5.114976	17.381165	9.594501
5/8/2018 7:00	338400.001	5.114521	17.389847	9.59554
5/8/2018 7:15	339300.001	5.116478	17.389847	9.591079

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/8/2018 7:30	340200.001	5.117791	17.397095	9.588087
5/8/2018 7:45	341100.001	5.118366	17.379715	9.586775
5/8/2018 8:00	342000.001	5.117936	17.386963	9.587755
5/8/2018 8:15	342900.001	5.119491	17.371765	9.584211
5/8/2018 8:30	343800.001	5.119258	17.367432	9.584742
5/8/2018 8:45	344700.001	5.116596	17.341385	9.590809
5/8/2018 9:00	345600.001	5.121152	17.375381	9.580425
5/8/2018 9:15	346500.001	5.122344	17.369598	9.577707
5/8/2018 9:30	347400.001	5.121633	17.374649	9.579329
5/8/2018 9:45	348300.001	5.124954	17.38623	9.571759
5/8/2018 10:00	349200.001	5.125369	17.374649	9.570813
5/8/2018 10:15	350100.001	5.125421	17.373215	9.570696
5/8/2018 10:30	351000.001	5.12596	17.366699	9.569466
5/8/2018 10:45	351900.001	5.12765	17.375381	9.565615
5/8/2018 11:00	352800.001	5.132288	17.372482	9.555042
5/8/2018 11:15	353700.001	5.133303	17.399979	9.552729
5/8/2018 11:30	354600.001	5.133574	17.386963	9.552113
5/8/2018 11:45	355500.001	5.136843	17.388412	9.544661
5/8/2018 12:00	356400.001	5.138181	17.374649	9.541611
5/8/2018 12:15	357300.001	5.142976	17.405762	9.530682
5/8/2018 12:30	358200.001	5.143642	17.391296	9.529162
5/8/2018 12:45	359100.001	5.146128	17.38913	9.523497
5/8/2018 13:00	360000.001	5.149976	17.369598	9.514726
5/8/2018 13:15	360900.001	5.150178	17.364532	9.514265
5/8/2018 13:30	361800.001	5.155749	17.355133	9.501567
5/8/2018 13:45	362700.001	5.156051	17.395645	9.50088
5/8/2018 14:00	363600.001	5.157214	17.371765	9.49823
5/8/2018 14:15	364500.001	5.159937	17.383331	9.492023
5/8/2018 14:30	365400.001	5.166621	17.375381	9.476787
5/8/2018 14:45	366300.001	5.166662	17.378265	9.476694
5/8/2018 15:00	367200.001	5.169094	17.373932	9.47115
5/8/2018 15:15	368100.001	5.167828	17.372482	9.474036
5/8/2018 15:30	369000.001	5.171774	17.379715	9.465042
5/8/2018 15:45	369900.001	5.172628	17.376099	9.463095
5/8/2018 16:00	370800.001	5.176607	17.384064	9.454026
5/8/2018 16:15	371700.001	5.175714	17.366699	9.456061
5/8/2018 16:30	372600.001	5.176658	17.377548	9.453911
5/8/2018 16:45	373500.001	5.173702	17.385513	9.460647
5/8/2018 17:00	374400.001	5.174887	17.375381	9.457946
5/8/2018 17:15	375300.001	5.176812	17.361633	9.453559
5/8/2018 17:30	376200.001	5.176167	17.373932	9.455028
5/8/2018 17:45	377100.001	5.174521	17.361633	9.458781

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/8/2018 18:00	378000.001	5.172318	17.362366	9.463803
5/8/2018 18:15	378900.001	5.17161	17.392029	9.465416
5/8/2018 18:30	379800.001	5.172123	17.363083	9.464247
5/8/2018 18:45	380700.001	5.171431	17.369598	9.465824
5/8/2018 19:00	381600.001	5.183482	17.38913	9.438355
5/8/2018 19:15	382500.001	5.183635	17.376831	9.438007
5/8/2018 19:30	383400.001	5.186389	17.382614	9.431729
5/8/2018 19:45	384300.001	5.184864	17.388412	9.435207
5/8/2018 20:00	385200.001	5.182868	17.376831	9.439756
5/8/2018 20:15	386100.001	5.175416	17.378998	9.456741
5/8/2018 20:30	387000.001	5.1661	17.378265	9.477976
5/8/2018 20:45	387900.001	5.161882	17.384064	9.487589
5/8/2018 21:00	388800.001	5.156488	17.380447	9.499884
5/8/2018 21:15	389700.001	5.155561	17.385513	9.501995
5/8/2018 21:30	390600.001	5.149414	17.371048	9.516008
5/8/2018 21:45	391500.001	5.149475	17.399261	9.515868
5/8/2018 22:00	392400.001	5.14778	17.350067	9.519731
5/8/2018 22:15	393300.001	5.145192	17.370316	9.52563
5/8/2018 22:30	394200.001	5.141336	17.370316	9.53442
5/8/2018 22:45	395100.001	5.144871	17.399979	9.526362
5/8/2018 23:00	396000.001	5.144182	17.392029	9.527932
5/8/2018 23:15	396900.001	5.141588	17.378265	9.533845
5/8/2018 23:30	397800.001	5.142815	17.384064	9.531049
5/8/2018 23:45	398700.001	5.141047	17.360931	9.53508
5/9/2018 0:00	399600.001	5.141665	17.368149	9.533669
5/9/2018 0:15	400500.001	5.140327	17.380447	9.536718
5/9/2018 0:30	401400.001	5.140811	17.36525	9.535616
5/9/2018 0:45	402300.001	5.144573	17.368149	9.527041
5/9/2018 1:00	403200.001	5.142403	17.3573	9.531988
5/9/2018 1:15	404100.001	5.141214	17.368149	9.534697
5/9/2018 1:30	405000.001	5.142403	17.407928	9.531988
5/9/2018 1:45	405900.001	5.143847	17.393478	9.528695
5/9/2018 2:00	406800.001	5.143405	17.382614	9.529704
5/9/2018 2:15	407700.001	5.145035	17.374649	9.525989
5/9/2018 2:30	408600.001	5.146805	17.380447	9.521954
5/9/2018 2:45	409500.001	5.144795	17.368149	9.526535
5/9/2018 3:00	410400.001	5.146656	17.379715	9.522295
5/9/2018 3:15	411300.001	5.144806	17.367432	9.52651
5/9/2018 3:30	412200.001	5.146723	17.368881	9.522141
5/9/2018 3:45	413100.001	5.146367	17.354416	9.522952
5/9/2018 4:00	414000.001	5.144912	17.376099	9.526268
5/9/2018 4:15	414900.001	5.1491	17.396362	9.516723

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/9/2018 4:30	415800.001	5.148858	17.366699	9.517276
5/9/2018 4:45	416700.001	5.14901	17.371765	9.516929
5/9/2018 5:00	417600.001	5.149404	17.383331	9.51603
5/9/2018 5:15	418500.001	5.153078	17.365982	9.507656
5/9/2018 5:30	419400.001	5.150322	17.375381	9.513937
5/9/2018 5:45	420300.001	5.149862	17.370316	9.514987
5/9/2018 6:00	421200.001	5.151071	17.360199	9.512231
5/9/2018 6:15	422100.001	5.14888	17.384064	9.517223
5/9/2018 6:30	423000.001	5.148297	17.355133	9.518554
5/9/2018 6:45	423900.001	5.148792	17.381165	9.517425
5/9/2018 7:00	424800.001	5.14507	17.346451	9.525909
5/9/2018 7:15	425700.001	5.146877	17.371048	9.52179
5/9/2018 7:30	426600.001	5.145597	17.384781	9.524709
5/9/2018 7:45	427500.001	5.14567	17.352966	9.52454
5/9/2018 8:00	428400.001	5.149628	17.381165	9.515519
5/9/2018 8:15	429300.001	5.147056	17.375381	9.521383
5/9/2018 8:30	430200.001	5.153038	17.378998	9.507748
5/9/2018 8:45	431100.001	5.151035	17.369598	9.512312
5/9/2018 9:00	432000.001	5.151713	17.367432	9.510766
5/9/2018 9:15	432900.001	5.154337	17.388412	9.504786
5/9/2018 9:30	433800.001	5.153903	17.376099	9.505776
5/9/2018 9:45	434700.001	5.159245	17.365982	9.493601
5/9/2018 10:00	435600.001	5.155149	17.370316	9.502936
5/9/2018 10:15	436500.001	5.148297	17.372482	9.518554
5/9/2018 10:30	437400.001	5.145638	17.369598	9.524615
5/9/2018 10:45	438300.001	5.146527	17.378998	9.522587
5/9/2018 11:00	439200.001	5.149527	17.361633	9.515751
5/9/2018 11:15	440100.001	5.153156	17.347168	9.507479
5/9/2018 11:30	441000.001	5.155137	17.398544	9.502963
5/9/2018 11:45	441900.001	5.161075	17.364532	9.489429
5/9/2018 12:00	442800.001	5.164864	17.377548	9.480793
5/9/2018 12:15	443700.001	5.167463	17.368881	9.474868
5/9/2018 12:30	444600.001	5.169379	17.351517	9.470502
5/9/2018 12:45	445500.001	5.173054	17.371765	9.462125
5/9/2018 13:00	446400.001	5.17556	17.355133	9.456412
5/9/2018 13:15	447300.001	5.179179	17.381165	9.448165
5/9/2018 13:30	448200.001	5.177062	17.371048	9.452989
5/9/2018 13:45	449100.001	5.179984	17.370316	9.446329
5/9/2018 14:00	450000.001	5.18165	17.350784	9.442532
5/9/2018 14:15	450900.001	5.182793	17.369598	9.439927
5/9/2018 14:30	451800.001	5.182908	17.364532	9.439664
5/9/2018 14:45	452700.001	5.187557	17.392746	9.429068

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/9/2018 15:00	453600.001	5.190021	17.382614	9.423452
5/9/2018 15:15	454500.001	5.19149	17.358032	9.420104
5/9/2018 15:30	455400.001	5.19168	17.346451	9.41967
5/9/2018 15:45	456300.001	5.197183	17.385513	9.407128
5/9/2018 16:00	457200.001	5.197879	17.371048	9.40554
5/9/2018 16:15	458100.001	5.199076	17.399261	9.402812
5/9/2018 16:30	459000.001	5.201283	17.368881	9.397782
5/9/2018 16:45	459900.001	5.200719	17.381897	9.399068
5/9/2018 17:00	460800.001	5.20476	17.372482	9.389858
5/9/2018 17:15	461700.001	5.205878	17.381165	9.387308
5/9/2018 17:30	462600.001	5.207961	17.341385	9.382561
5/9/2018 17:45	463500.001	5.205528	17.363083	9.388105
5/9/2018 18:00	464400.001	5.205028	17.371048	9.389246
5/9/2018 18:15	465300.001	5.201969	17.350067	9.396218
5/9/2018 18:30	466200.001	5.191251	17.363815	9.420648
5/9/2018 18:45	467100.001	5.19005	17.355133	9.423386
5/9/2018 19:00	468000.001	5.188695	17.344269	9.426474
5/9/2018 19:15	468900.001	5.192541	17.367432	9.417708
5/9/2018 19:30	469800.001	5.191068	17.365982	9.421066
5/9/2018 19:45	470700.001	5.19172	17.362366	9.419579
5/9/2018 20:00	471600.001	5.190563	17.366699	9.422215
5/9/2018 20:15	472500.001	5.190139	17.370316	9.423183
5/9/2018 20:30	473400.001	5.189935	17.370316	9.423647
5/9/2018 20:45	474300.001	5.18966	17.382614	9.424275
5/9/2018 21:00	475200.001	5.190376	17.352966	9.422642
5/9/2018 21:15	476100.001	5.188804	17.349335	9.426227
5/9/2018 21:30	477000.001	5.188191	17.342819	9.427623
5/9/2018 21:45	477900.001	5.187594	17.369598	9.428983
5/9/2018 22:00	478800.001	5.188605	17.358032	9.426679
5/9/2018 22:15	479700.001	5.188122	17.366699	9.42778
5/9/2018 22:30	480600.001	5.183674	17.353683	9.437918
5/9/2018 22:45	481500.001	5.182263	17.366699	9.441134
5/9/2018 23:00	482400.001	5.185205	17.359482	9.434429
5/9/2018 23:15	483300.001	5.184184	17.337051	9.436756
5/9/2018 23:30	484200.001	5.187863	17.337051	9.42837
5/9/2018 23:45	485100.001	5.184568	17.352234	9.43588
5/10/2018 0:00	486000.001	5.188311	17.377548	9.427349
5/10/2018 0:15	486900.001	5.188605	17.345718	9.426679
5/10/2018 0:30	487800.001	5.19013	17.3479	9.423203
5/10/2018 0:45	488700.001	5.189373	17.343552	9.424928
5/10/2018 1:00	489600.001	5.191951	17.342819	9.419052
5/10/2018 1:15	490500.001	5.190307	17.350067	9.422799

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/10/2018 1:30	491400.001	5.192396	17.36525	9.418039
5/10/2018 1:45	492300.001	5.194541	17.338501	9.413148
5/10/2018 2:00	493200.001	5.198697	17.342117	9.403676
5/10/2018 2:15	494100.001	5.196258	17.350067	9.409237
5/10/2018 2:30	495000.001	5.19766	17.351517	9.406039
5/10/2018 2:45	495900.001	5.199708	17.356583	9.401372
5/10/2018 3:00	496800.001	5.20157	17.365982	9.397129
5/10/2018 3:15	497700.001	5.203393	17.339218	9.392973
5/10/2018 3:30	498600.001	5.205688	17.330536	9.38774
5/10/2018 3:45	499500.001	5.207891	17.356583	9.382721
5/10/2018 4:00	500400.001	5.210606	17.334152	9.376532
5/10/2018 4:15	501300.001	5.210527	17.350784	9.376711
5/10/2018 4:30	502200.001	5.211898	17.347168	9.373588
5/10/2018 4:45	503100.001	5.212742	17.342117	9.371664
5/10/2018 5:00	504000.001	5.216539	17.343552	9.363009
5/10/2018 5:15	504900.001	5.213058	17.354416	9.370942
5/10/2018 5:30	505800.001	5.213938	17.342819	9.368937
5/10/2018 5:45	506700.001	5.215421	17.32692	9.365558
5/10/2018 6:00	507600.001	5.214763	17.334152	9.367058
5/10/2018 6:15	508500.001	5.215153	17.353683	9.366169
5/10/2018 6:30	509400.001	5.212742	17.353683	9.371664
5/10/2018 6:45	510300.001	5.214649	17.351517	9.367316
5/10/2018 7:00	511200.001	5.218167	17.360199	9.359299
5/10/2018 7:15	512100.001	5.214343	17.350784	9.368015
5/10/2018 7:30	513000.001	5.21254	17.337769	9.372125
5/10/2018 7:45	513900.001	5.215251	17.337051	9.365944
5/10/2018 8:00	514800.001	5.219266	17.351517	9.356792
5/10/2018 8:15	515700.001	5.217094	17.361633	9.361743
5/10/2018 8:30	516600.001	5.216603	17.371048	9.362864
5/10/2018 8:45	517500.001	5.221046	17.339951	9.352735
5/10/2018 9:00	518400.001	5.22391	17.360931	9.346209
5/10/2018 9:15	519300.001	5.227423	17.344269	9.338202
5/10/2018 9:30	520200.001	5.223409	17.328369	9.347349
5/10/2018 9:45	521100.001	5.226974	17.334869	9.339226
5/10/2018 10:00	522000.001	5.226664	17.327652	9.339931
5/10/2018 10:15	522900.001	5.229793	17.349335	9.3328
5/10/2018 10:30	523800.001	5.229985	17.356583	9.332362
5/10/2018 10:45	524700.001	5.231334	17.351517	9.329288
5/10/2018 11:00	525600.001	5.23164	17.363083	9.328588
5/10/2018 11:15	526500.001	5.23456	17.347168	9.321934
5/10/2018 11:30	527400.001	5.234239	17.359482	9.322666
5/10/2018 11:45	528300.001	5.237753	17.337769	9.314654

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/10/2018 12:00	529200.001	5.238742	17.328369	9.312402
5/10/2018 12:15	530100.001	5.243616	17.353683	9.301291
5/10/2018 12:30	531000.001	5.241884	17.358749	9.30524
5/10/2018 12:45	531900.001	5.244382	17.339218	9.299546
5/10/2018 13:00	532800.001	5.247967	17.328369	9.291375
5/10/2018 13:15	533700.001	5.249033	17.335602	9.288945
5/10/2018 13:30	534600.001	5.249729	17.330536	9.287358
5/10/2018 13:45	535500.001	5.251296	17.330536	9.283788
5/10/2018 14:00	536400.001	5.25475	17.361633	9.275913
5/10/2018 14:15	537300.001	5.258117	17.348618	9.268239
5/10/2018 14:30	538200.001	5.26318	17.365982	9.256701
5/10/2018 14:45	539100.001	5.264919	17.347168	9.252735
5/10/2018 15:00	540000.001	5.263408	17.339951	9.256181
5/10/2018 15:15	540900.001	5.271064	17.367432	9.238729
5/10/2018 15:30	541800.001	5.271142	17.340668	9.238551
5/10/2018 15:45	542700.001	5.273181	17.337769	9.233904
5/10/2018 16:00	543600.001	5.274236	17.352234	9.231501
5/10/2018 16:15	544500.001	5.275194	17.346451	9.229317
5/10/2018 16:30	545400.001	5.277259	17.361633	9.224609
5/10/2018 16:45	546300.001	5.280567	17.365982	9.217069
5/10/2018 17:00	547200.001	5.283765	17.354416	9.209781
5/10/2018 17:15	548100.001	5.283432	17.352966	9.210538
5/10/2018 17:30	549000.001	5.282897	17.343552	9.21176
5/10/2018 17:45	549900.001	5.280567	17.338501	9.217069
5/10/2018 18:00	550800.001	5.280782	17.341385	9.216579
5/10/2018 18:15	551700.001	5.282755	17.371048	9.212083
5/10/2018 18:30	552600.001	5.283363	17.353683	9.210695
5/10/2018 18:45	553500.001	5.285829	17.359482	9.205076
5/10/2018 19:00	554400.001	5.283322	17.350067	9.21079
5/10/2018 19:15	555300.001	5.282767	17.338501	9.212054
5/10/2018 19:30	556200.001	5.282385	17.349335	9.212926
5/10/2018 19:45	557100.001	5.279974	17.336319	9.218421
5/10/2018 20:00	558000.001	5.284615	17.339218	9.207844
5/10/2018 20:15	558900.001	5.280526	17.339218	9.217162
5/10/2018 20:30	559800.001	5.27668	17.339218	9.22593
5/10/2018 20:45	560700.001	5.27878	17.340668	9.221143
5/10/2018 21:00	561600.001	5.274336	17.355133	9.231272
5/10/2018 21:15	562500.001	5.27342	17.338501	9.233358
5/10/2018 21:30	563400.001	5.274113	17.329819	9.231779
5/10/2018 21:45	564300.001	5.272635	17.342819	9.23515
5/10/2018 22:00	565200.001	5.271101	17.338501	9.238645
5/10/2018 22:15	566100.001	5.270165	17.329102	9.240778

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/10/2018 22:30	567000.001	5.268811	17.339218	9.243864
5/10/2018 22:45	567900.001	5.266674	17.320404	9.248736
5/10/2018 23:00	568800.001	5.265452	17.363815	9.25152
5/10/2018 23:15	569700.001	5.26527	17.331985	9.251935
5/10/2018 23:30	570600.001	5.266329	17.348618	9.249521
5/10/2018 23:45	571500.001	5.266641	17.314621	9.248811
5/11/2018 0:00	572400.001	5.266407	17.368881	9.249344
5/11/2018 0:15	573300.001	5.261208	17.322586	9.261194
5/11/2018 0:30	574200.001	5.262722	17.35585	9.257745
5/11/2018 0:45	575100.001	5.26113	17.350784	9.261372
5/11/2018 1:00	576000.001	5.25891	17.365982	9.266433
5/11/2018 1:15	576900.001	5.262124	17.333435	9.259107
5/11/2018 1:30	577800.001	5.261617	17.350067	9.260262
5/11/2018 1:45	578700.001	5.25991	17.339218	9.264153
5/11/2018 2:00	579600.001	5.259065	17.374649	9.266079
5/11/2018 2:15	580500.001	5.259943	17.315338	9.264078
5/11/2018 2:30	581400.001	5.259312	17.331268	9.265516
5/11/2018 2:45	582300.001	5.259193	17.361633	9.265786
5/11/2018 3:00	583200.001	5.253385	17.342117	9.279026
5/11/2018 3:15	584100.001	5.250929	17.340668	9.284622
5/11/2018 3:30	585000.001	5.251257	17.352966	9.283876
5/11/2018 3:45	585900.001	5.251499	17.349335	9.283325
5/11/2018 4:00	586800.001	5.25095	17.3479	9.284575
5/11/2018 4:15	587700.001	5.249768	17.326202	9.28727
5/11/2018 4:30	588600.001	5.25182	17.335602	9.282594
5/11/2018 4:45	589500.001	5.251427	17.340668	9.283488
5/11/2018 5:00	590400.001	5.249344	17.316071	9.288237
5/11/2018 5:15	591300.001	5.249401	17.336319	9.288106
5/11/2018 5:30	592200.001	5.247915	17.349335	9.291493
5/11/2018 5:45	593100.001	5.247394	17.327652	9.292682
5/11/2018 6:00	594000.001	5.245043	17.316788	9.298038
5/11/2018 6:15	594900.001	5.249031	17.339218	9.288949
5/11/2018 6:30	595800.001	5.245597	17.332718	9.296777
5/11/2018 6:45	596700.001	5.245004	17.334152	9.298129
5/11/2018 7:00	597600.001	5.243176	17.346451	9.302296
5/11/2018 7:15	598500.001	5.246042	17.332718	9.295762
5/11/2018 7:30	599400.001	5.24148	17.351517	9.30616
5/11/2018 7:45	600300.001	5.241464	17.337051	9.306197
5/11/2018 8:00	601200.001	5.243209	17.314621	9.302218
5/11/2018 8:15	602100.001	5.240775	17.32692	9.307769
5/11/2018 8:30	603000.001	5.238473	17.31752	9.313015
5/11/2018 8:45	603900.001	5.240529	17.351517	9.308328

MW-15				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/11/2018 9:00	604800.001	5.24039	17.319687	9.308645

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/11/2018 10:30	0	12.771787	16.761078	7.279218
5/11/2018 10:45	900	12.763202	16.675964	7.298786
5/11/2018 11:00	1800	12.751022	16.680283	7.326547
5/11/2018 11:15	2700	12.747572	16.688217	7.334411
5/11/2018 11:30	3600	12.745161	16.671631	7.339906
5/11/2018 11:45	4500	12.741944	16.670898	7.347238
5/11/2018 12:00	5400	12.743643	16.643478	7.343367
5/11/2018 12:15	6300	12.746229	16.686783	7.337471
5/11/2018 12:30	7200	12.754377	16.660797	7.318899
5/11/2018 12:45	8100	12.76315	16.66153	7.298903
5/11/2018 13:00	9000	12.774477	16.668732	7.273086
5/11/2018 13:15	9900	12.785367	16.656479	7.248264
5/11/2018 13:30	10800	12.799629	16.685333	7.215756
5/11/2018 13:45	11700	12.812425	16.644928	7.186592
5/11/2018 14:00	12600	12.825419	16.66008	7.156972
5/11/2018 14:15	13500	12.832232	16.672348	7.141443
5/11/2018 14:30	14400	12.843899	16.691101	7.114852
5/11/2018 14:45	15300	12.852571	16.682449	7.095087
5/11/2018 15:00	16200	12.858069	16.66153	7.082553
5/11/2018 15:15	17100	12.862932	16.66008	7.071469
5/11/2018 15:30	18000	12.86981	16.66153	7.055792
5/11/2018 15:45	18900	12.876781	16.690384	7.039903
5/11/2018 16:00	19800	12.873882	16.656479	7.046511
5/11/2018 16:15	20700	12.879071	16.660797	7.034684
5/11/2018 16:30	21600	12.880915	16.691833	7.030482
5/11/2018 16:45	22500	12.878778	16.66008	7.035353
5/11/2018 17:00	23400	12.872877	16.670898	7.048802
5/11/2018 17:15	24300	12.866221	16.66008	7.063972
5/11/2018 17:30	25200	12.864388	16.686783	7.068152
5/11/2018 17:45	26100	12.855573	16.670898	7.088244
5/11/2018 18:00	27000	12.845546	16.683167	7.111098
5/11/2018 18:15	27900	12.835728	16.660797	7.133477
5/11/2018 18:30	28800	12.824948	16.66658	7.158046
5/11/2018 18:45	29700	12.81115	16.652145	7.189498
5/11/2018 19:00	30600	12.799372	16.682449	7.216343
5/11/2018 19:15	31500	12.783928	16.665848	7.251544
5/11/2018 19:30	32400	12.766995	16.660797	7.290139
5/11/2018 19:45	33300	12.750118	16.669464	7.328607
5/11/2018 20:00	34200	12.73157	16.657913	7.370884
5/11/2018 20:15	35100	12.716006	16.696152	7.406359
5/11/2018 20:30	36000	12.705218	16.652145	7.430948
5/11/2018 20:45	36900	12.694785	16.66153	7.454729

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/11/2018 21:00	37800	12.685575	16.655746	7.47572
5/11/2018 21:15	38700	12.678184	16.677399	7.492568
5/11/2018 21:30	39600	12.671146	16.657913	7.508608
5/11/2018 21:45	40500	12.669959	16.647095	7.511314
5/11/2018 22:00	41400	12.662796	16.668732	7.527641
5/11/2018 22:15	42300	12.659919	16.66153	7.5342
5/11/2018 22:30	43200	12.659857	16.679565	7.534341
5/11/2018 22:45	44100	12.65727	16.66803	7.540236
5/11/2018 23:00	45000	12.659737	16.699753	7.534615
5/11/2018 23:15	45900	12.663784	16.677399	7.52539
5/11/2018 23:30	46800	12.666148	16.643478	7.520001
5/11/2018 23:45	47700	12.676515	16.681015	7.496373
5/12/2018 0:00	48600	12.693939	16.635559	7.456656
5/12/2018 0:15	49500	12.702213	16.646393	7.437798
5/12/2018 0:30	50400	12.722516	16.651428	7.391521
5/12/2018 0:45	51300	12.737391	16.66803	7.357615
5/12/2018 1:00	52200	12.770632	16.648529	7.28185
5/12/2018 1:15	53100	12.79423	16.657211	7.228062
5/12/2018 1:30	54000	12.825253	16.672348	7.157353
5/12/2018 1:45	54900	12.850385	16.685333	7.100069
5/12/2018 2:00	55800	12.874461	16.664413	7.045191
5/12/2018 2:15	56700	12.90104	16.653595	6.98461
5/12/2018 2:30	57600	12.921822	16.66803	6.937242
5/12/2018 2:45	58500	12.941944	16.655029	6.891377
5/12/2018 3:00	59400	12.95672	16.662964	6.857697
5/12/2018 3:15	60300	12.972261	16.649261	6.822274
5/12/2018 3:30	61200	12.990372	16.663681	6.780995
5/12/2018 3:45	62100	13.003897	16.650711	6.750168
5/12/2018 4:00	63000	13.017035	16.657211	6.720221
5/12/2018 4:15	63900	13.032306	16.674515	6.685415
5/12/2018 4:30	64800	13.045685	16.657913	6.65492
5/12/2018 4:45	65700	13.059184	16.656479	6.624151
5/12/2018 5:00	66600	13.075649	16.676666	6.586621
5/12/2018 5:15	67500	13.090136	16.653595	6.553603
5/12/2018 5:30	68400	13.098467	16.657913	6.534613
5/12/2018 5:45	69300	13.111097	16.678848	6.505825
5/12/2018 6:00	70200	13.110099	16.670166	6.508101
5/12/2018 6:15	71100	13.102807	16.658646	6.524721
5/12/2018 6:30	72000	13.087489	16.665848	6.559635
5/12/2018 6:45	72900	13.072837	16.672348	6.593032
5/12/2018 7:00	73800	13.052075	16.66008	6.640354
5/12/2018 7:15	74700	13.029509	16.664413	6.691791

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/12/2018 7:30	75600	13.012069	16.688934	6.731541
5/12/2018 7:45	76500	12.998727	16.676666	6.761951
5/12/2018 8:00	77400	12.984845	16.664413	6.793592
5/12/2018 8:15	78300	12.971418	16.648529	6.824196
5/12/2018 8:30	79200	12.960892	16.651428	6.848189
5/12/2018 8:45	80100	12.950006	16.662247	6.873003
5/12/2018 9:00	81000	12.937741	16.659363	6.900956
5/12/2018 9:15	81900	12.916338	16.670166	6.949741
5/12/2018 9:30	82800	12.899838	16.649979	6.987349
5/12/2018 9:45	83700	12.883919	16.66803	7.023634
5/12/2018 10:00	84600	12.860052	16.694717	7.078034
5/12/2018 10:15	85500	12.850898	16.660797	7.098899
5/12/2018 10:30	86400	12.833406	16.655746	7.138768
5/12/2018 10:45	87300	12.819728	16.681015	7.169945
5/12/2018 11:00	88200	12.812	16.678848	7.187559
5/12/2018 11:15	89100	12.805111	16.670166	7.203262
5/12/2018 11:30	90000	12.803117	16.651428	7.207807
5/12/2018 11:45	90900	12.800594	16.678116	7.213557
5/12/2018 12:00	91800	12.795081	16.655746	7.226123
5/12/2018 12:15	92700	12.795624	16.649979	7.224886
5/12/2018 12:30	93600	12.800302	16.672348	7.214224
5/12/2018 12:45	94500	12.803052	16.678116	7.207955
5/12/2018 13:00	95400	12.809351	16.657211	7.193597
5/12/2018 13:15	96300	12.816956	16.691101	7.176264
5/12/2018 13:30	97200	12.825933	16.652863	7.155801
5/12/2018 13:45	98100	12.836407	16.679565	7.131929
5/12/2018 14:00	99000	12.846701	16.662964	7.108466
5/12/2018 14:15	99900	12.862366	16.672348	7.072761
5/12/2018 14:30	100800	12.873623	16.678116	7.047102
5/12/2018 14:45	101700	12.887792	16.647827	7.014807
5/12/2018 15:00	102600	12.898424	16.659363	6.990572
5/12/2018 15:15	103500	12.916049	16.665848	6.9504
5/12/2018 15:30	104400	12.9238	16.665131	6.932732
5/12/2018 15:45	105300	12.935648	16.670898	6.905728
5/12/2018 16:00	106200	12.947935	16.669464	6.877721
5/12/2018 16:15	107100	12.952688	16.652145	6.866888
5/12/2018 16:30	108000	12.965925	16.655029	6.836717
5/12/2018 16:45	108900	12.968377	16.678116	6.831128
5/12/2018 17:00	109800	12.973191	16.680283	6.820155
5/12/2018 17:15	110700	12.970156	16.667297	6.827074
5/12/2018 17:30	111600	12.967451	16.655746	6.833239
5/12/2018 17:45	112500	12.96422	16.650711	6.840603

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/12/2018 18:00	113400	12.956273	16.691101	6.858716
5/12/2018 18:15	114300	12.94962	16.652145	6.87388
5/12/2018 18:30	115200	12.939812	16.66008	6.896237
5/12/2018 18:45	116100	12.928992	16.66153	6.920898
5/12/2018 19:00	117000	12.919015	16.660797	6.94364
5/12/2018 19:15	117900	12.911906	16.625458	6.959842
5/12/2018 19:30	118800	12.893261	16.647095	7.002341
5/12/2018 19:45	119700	12.881473	16.657211	7.02921
5/12/2018 20:00	120600	12.862642	16.70697	7.07213
5/12/2018 20:15	121500	12.954162	16.718521	6.863529
5/12/2018 20:30	122400	12.845464	16.761078	7.111285
5/12/2018 20:45	123300	12.839983	16.70697	7.123778
5/12/2018 21:00	124200	12.835098	16.686783	7.134912
5/12/2018 21:15	125100	12.815396	16.722839	7.179818
5/12/2018 21:30	126000	12.829258	16.712021	7.148223
5/12/2018 21:45	126900	12.811743	16.662964	7.188146
5/12/2018 22:00	127800	12.766562	16.657913	7.291126
5/12/2018 22:15	128700	12.775678	16.66803	7.27035
5/12/2018 22:30	129600	12.742036	16.66658	7.347029
5/12/2018 22:45	130500	12.730656	16.67308	7.372968
5/12/2018 23:00	131400	12.702112	16.682449	7.438028
5/12/2018 23:15	132300	12.67189	16.670166	7.506913
5/12/2018 23:30	133200	12.656198	16.66658	7.542681
5/12/2018 23:45	134100	12.61236	16.67308	7.642601
5/13/2018 0:00	135000	12.629923	16.688217	7.60257
5/13/2018 0:15	135900	12.619308	16.650711	7.626763
5/13/2018 0:30	136800	12.652145	16.672348	7.551918
5/13/2018 0:45	137700	12.666403	16.676666	7.519421
5/13/2018 1:00	138600	12.699086	16.675232	7.444925
5/13/2018 1:15	139500	12.729424	16.664413	7.375777
5/13/2018 1:30	140400	12.741587	16.657913	7.348053
5/13/2018 1:45	141300	12.757168	16.677399	7.312539
5/13/2018 2:00	142200	12.771542	16.66658	7.279777
5/13/2018 2:15	143100	12.775329	16.647095	7.271145
5/13/2018 2:30	144000	12.783478	16.659363	7.252571
5/13/2018 2:45	144900	12.796882	16.679565	7.222019
5/13/2018 3:00	145800	12.810731	16.656479	7.190452
5/13/2018 3:15	146700	12.828418	16.654327	7.150138
5/13/2018 3:30	147600	12.836729	16.674515	7.131195
5/13/2018 3:45	148500	12.861546	16.656479	7.07463
5/13/2018 4:00	149400	12.884814	16.662247	7.021594
5/13/2018 4:15	150300	12.909594	16.66803	6.965114

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/13/2018 4:30	151200	12.93271	16.651428	6.912425
5/13/2018 4:45	152100	12.946342	16.660797	6.881351
5/13/2018 5:00	153000	12.958888	16.662964	6.852757
5/13/2018 5:15	153900	12.968062	16.665131	6.831845
5/13/2018 5:30	154800	12.971842	16.665131	6.823231
5/13/2018 5:45	155700	12.978874	16.667297	6.807202
5/13/2018 6:00	156600	12.978326	16.648529	6.808452
5/13/2018 6:15	157500	12.976905	16.66153	6.81169
5/13/2018 6:30	158400	12.973384	16.662964	6.819716
5/13/2018 6:45	159300	12.973802	16.682449	6.818764
5/13/2018 7:00	160200	12.968765	16.662247	6.830243
5/13/2018 7:15	161100	12.963375	16.655029	6.842529
5/13/2018 7:30	162000	12.952171	16.665848	6.868066
5/13/2018 7:45	162900	12.943975	16.658646	6.886747
5/13/2018 8:00	163800	12.919624	16.682449	6.94225
5/13/2018 8:15	164700	12.905653	16.67308	6.974095
5/13/2018 8:30	165600	12.886232	16.683167	7.018361
5/13/2018 8:45	166500	12.86762	16.669464	7.060785
5/13/2018 9:00	167400	12.851562	16.652145	7.097386
5/13/2018 9:15	168300	12.83892	16.662964	7.126201
5/13/2018 9:30	169200	12.830521	16.652145	7.145345
5/13/2018 9:45	170100	12.820551	16.668732	7.168069
5/13/2018 10:00	171000	12.812612	16.673782	7.186165
5/13/2018 10:15	171900	12.804479	16.686066	7.204703
5/13/2018 10:30	172800	12.796751	16.663681	7.222317
5/13/2018 10:45	173700	12.787519	16.662964	7.243361
5/13/2018 11:00	174600	12.77475	16.635559	7.272464
5/13/2018 11:15	175500	12.767436	16.683899	7.289135
5/13/2018 11:30	176400	12.74971	16.678848	7.329537
5/13/2018 11:45	177300	12.745433	16.671631	7.339287
5/13/2018 12:00	178200	12.737818	16.686066	7.356644
5/13/2018 12:15	179100	12.724996	16.660797	7.38587
5/13/2018 12:30	180000	12.713762	16.670898	7.411474
5/13/2018 12:45	180900	12.706137	16.689667	7.428854
5/13/2018 13:00	181800	12.707974	16.649261	7.424666
5/13/2018 13:15	182700	12.709047	16.662964	7.42222
5/13/2018 13:30	183600	12.723904	16.672348	7.388358
5/13/2018 13:45	184500	12.745168	16.657211	7.339891
5/13/2018 14:00	185400	12.764726	16.662247	7.295312
5/13/2018 14:15	186300	12.786205	16.674515	7.246354
5/13/2018 14:30	187200	12.805438	16.655029	7.202516
5/13/2018 14:45	188100	12.824009	16.63916	7.160187

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/13/2018 15:00	189000	12.842239	16.665848	7.118635
5/13/2018 15:15	189900	12.851957	16.632675	7.096485
5/13/2018 15:30	190800	12.861192	16.677399	7.075437
5/13/2018 15:45	191700	12.874235	16.654327	7.045706
5/13/2018 16:00	192600	12.886508	16.657913	7.017733
5/13/2018 16:15	193500	12.898444	16.642776	6.990527
5/13/2018 16:30	194400	12.916071	16.686783	6.95035
5/13/2018 16:45	195300	12.937129	16.657913	6.902352
5/13/2018 17:00	196200	12.953398	16.678116	6.865271
5/13/2018 17:15	197100	12.969842	16.66658	6.827789
5/13/2018 17:30	198000	12.986019	16.667297	6.790916
5/13/2018 17:45	198900	12.998968	16.676666	6.761402
5/13/2018 18:00	199800	13.006603	16.673782	6.743999
5/13/2018 18:15	200700	13.019785	16.672348	6.713953
5/13/2018 18:30	201600	13.015617	16.644928	6.723453
5/13/2018 18:45	202500	13.013042	16.665131	6.729322
5/13/2018 19:00	203400	13.00849	16.680283	6.739699
5/13/2018 19:15	204300	12.99747	16.670898	6.764816
5/13/2018 19:30	205200	12.986948	16.673782	6.788799
5/13/2018 19:45	206100	12.97565	16.668732	6.814551
5/13/2018 20:00	207000	12.962025	16.664413	6.845607
5/13/2018 20:15	207900	12.950172	16.679565	6.872622
5/13/2018 20:30	208800	12.937103	16.66153	6.902411
5/13/2018 20:45	209700	12.924802	16.678116	6.930449
5/13/2018 21:00	210600	12.913364	16.659363	6.956519
5/13/2018 21:15	211500	12.898871	16.662247	6.989553
5/13/2018 21:30	212400	12.886161	16.663681	7.018524
5/13/2018 21:45	213300	12.871148	16.652145	7.052743
5/13/2018 22:00	214200	12.860387	16.646393	7.077271
5/13/2018 22:15	215100	12.838595	16.675964	7.12694
5/13/2018 22:30	216000	12.83194	16.664413	7.142111
5/13/2018 22:45	216900	12.819773	16.66008	7.169843
5/13/2018 23:00	217800	12.807607	16.66153	7.197573
5/13/2018 23:15	218700	12.804386	16.647827	7.204914
5/13/2018 23:30	219600	12.797657	16.682449	7.220252
5/13/2018 23:45	220500	12.795918	16.672348	7.224214
5/14/2018 0:00	221400	12.799928	16.650711	7.215076
5/14/2018 0:15	222300	12.801506	16.665131	7.211479
5/14/2018 0:30	223200	12.807986	16.647827	7.196708
5/14/2018 0:45	224100	12.819586	16.659363	7.170269
5/14/2018 1:00	225000	12.829868	16.644928	7.146832
5/14/2018 1:15	225900	12.848208	16.642044	7.10503

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/14/2018 1:30	226800	12.862265	16.656479	7.072991
5/14/2018 1:45	227700	12.884529	16.674515	7.022243
5/14/2018 2:00	228600	12.910717	16.693268	6.962553
5/14/2018 2:15	229500	12.931939	16.66803	6.914181
5/14/2018 2:30	230400	12.954145	16.662964	6.863566
5/14/2018 2:45	231300	12.982002	16.673782	6.800072
5/14/2018 3:00	232200	13.007717	16.658646	6.74146
5/14/2018 3:15	233100	13.037831	16.652863	6.67282
5/14/2018 3:30	234000	13.05912	16.672348	6.624296
5/14/2018 3:45	234900	13.091231	16.664413	6.551105
5/14/2018 4:00	235800	13.106471	16.659363	6.516369
5/14/2018 4:15	236700	13.131338	16.627625	6.45969
5/14/2018 4:30	237600	13.158056	16.671631	6.39879
5/14/2018 4:45	238500	13.174875	16.669464	6.360455
5/14/2018 5:00	239400	13.192669	16.686066	6.319898
5/14/2018 5:15	240300	13.205514	16.659363	6.29062
5/14/2018 5:30	241200	13.217381	16.655746	6.263572
5/14/2018 5:45	242100	13.228739	16.683167	6.237683
5/14/2018 6:00	243000	13.230383	16.647827	6.233936
5/14/2018 6:15	243900	13.241044	16.677399	6.209636
5/14/2018 6:30	244800	13.243153	16.657211	6.20483
5/14/2018 6:45	245700	13.242832	16.651428	6.20556
5/14/2018 7:00	246600	13.241719	16.651428	6.208097
5/14/2018 7:15	247500	13.233914	16.665848	6.225886
5/14/2018 7:30	248400	13.224187	16.667297	6.248058
5/14/2018 7:45	249300	13.214175	16.645645	6.270878
5/14/2018 8:00	250200	13.200816	16.657913	6.301328
5/14/2018 8:15	251100	13.190928	16.649979	6.323865
5/14/2018 8:30	252000	13.169813	16.667297	6.371993
5/14/2018 8:45	252900	13.152588	16.66803	6.411255
5/14/2018 9:00	253800	13.13257	16.668732	6.456881
5/14/2018 9:15	254700	13.116919	16.66153	6.492556
5/14/2018 9:30	255600	13.100671	16.665131	6.52959
5/14/2018 9:45	256500	13.089209	16.650711	6.555716
5/14/2018 10:00	257400	13.072781	16.670898	6.59316
5/14/2018 10:15	258300	13.060843	16.665131	6.620371
5/14/2018 10:30	259200	13.051298	16.671631	6.642125
5/14/2018 10:45	260100	13.034769	16.67308	6.6798
5/14/2018 11:00	261000	13.024794	16.693985	6.702537
5/14/2018 11:15	261900	12.53742	16.680283	7.813412
5/14/2018 11:30	262800	12.436737	16.686066	8.042899
5/14/2018 11:45	263700	12.379961	16.696869	8.17231

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/14/2018 12:00	264600	12.346446	16.687485	8.248701
5/14/2018 12:15	265500	12.310128	16.673782	8.33148
5/14/2018 12:30	266400	12.277653	16.693985	8.405501
5/14/2018 12:45	267300	12.253561	16.657913	8.460414
5/14/2018 13:00	268200	12.23191	16.66153	8.509764
5/14/2018 13:15	269100	12.215435	16.690384	8.547316
5/14/2018 13:30	270000	12.204156	16.665131	8.573024
5/14/2018 13:45	270900	12.252193	16.655029	8.463531
5/14/2018 14:00	271800	12.253773	16.66803	8.459931
5/14/2018 14:15	272700	12.253561	16.682449	8.460414
5/14/2018 14:30	273600	12.261137	16.657913	8.443146
5/14/2018 14:45	274500	12.269081	16.653595	8.425039
5/14/2018 15:00	275400	12.28275	16.662247	8.393883
5/14/2018 15:15	276300	12.292846	16.670898	8.370872
5/14/2018 15:30	277200	12.304207	16.66153	8.344976
5/14/2018 15:45	278100	12.319098	16.677399	8.311036
5/14/2018 16:00	279000	12.335765	16.684601	8.273046
5/14/2018 16:15	279900	12.345906	16.672348	8.249931
5/14/2018 16:30	280800	12.35984	16.662964	8.218171
5/14/2018 16:45	281700	12.312929	16.663681	8.325096
5/14/2018 17:00	282600	12.319525	16.673782	8.310062
5/14/2018 17:15	283500	12.326324	16.662247	8.294564
5/14/2018 17:30	284400	12.337252	16.673782	8.269657
5/14/2018 17:45	285300	12.344131	16.654327	8.253976
5/14/2018 18:00	286200	12.350695	16.658646	8.239017
5/14/2018 18:15	287100	12.353938	16.647095	8.231624
5/14/2018 18:30	288000	12.351061	16.655746	8.238182
5/14/2018 18:45	288900	12.345487	16.676666	8.250887
5/14/2018 19:00	289800	12.344648	16.664413	8.252798
5/14/2018 19:15	290700	12.335522	16.663681	8.273601
5/14/2018 19:30	291600	12.331134	16.644928	8.283602
5/14/2018 19:45	292500	12.317223	16.703369	8.31531
5/14/2018 20:00	293400	12.308105	16.655746	8.33609
5/14/2018 20:15	294300	12.292764	16.681015	8.371059
5/14/2018 20:30	295200	12.275448	16.688217	8.410527
5/14/2018 20:45	296100	12.264479	16.669464	8.43553
5/14/2018 21:00	297000	12.245248	16.66803	8.479362
5/14/2018 21:15	297900	12.231565	16.675964	8.510549
5/14/2018 21:30	298800	12.292419	16.665131	8.371844
5/14/2018 21:45	299700	12.222308	16.669464	8.53165
5/14/2018 22:00	300600	12.243019	16.640594	8.484443
5/14/2018 22:15	301500	12.229176	16.668732	8.515996

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/14/2018 22:30	302400	12.206834	16.656479	8.56692
5/14/2018 22:45	303300	12.188402	16.672348	8.608932
5/14/2018 23:00	304200	12.171251	16.656479	8.648024
5/14/2018 23:15	305100	12.14894	16.66153	8.698877
5/14/2018 23:30	306000	12.140918	16.675964	8.717163
5/14/2018 23:45	306900	12.135859	16.687485	8.728695
5/15/2018 0:00	307800	12.120508	16.671631	8.763682
5/15/2018 0:15	308700	12.131026	16.659363	8.739709
5/15/2018 0:30	309600	12.125861	16.659363	8.751482
5/15/2018 0:45	310500	12.140616	16.664413	8.71785
5/15/2018 1:00	311400	12.140844	16.659363	8.71733
5/15/2018 1:15	312300	12.155457	16.673782	8.684023
5/15/2018 1:30	313200	12.166476	16.653595	8.658907
5/15/2018 1:45	314100	12.169157	16.668732	8.652797
5/15/2018 2:00	315000	12.167328	16.646393	8.656966
5/15/2018 2:15	315900	12.171077	16.644928	8.648421
5/15/2018 2:30	316800	12.177335	16.673782	8.634157
5/15/2018 2:45	317700	12.195035	16.67308	8.593813
5/15/2018 3:00	318600	12.213477	16.664413	8.551778
5/15/2018 3:15	319500	12.243865	16.671631	8.482514
5/15/2018 3:30	320400	12.27599	16.649979	8.409292
5/15/2018 3:45	321300	12.3102	16.645645	8.331317
5/15/2018 4:00	322200	12.33834	16.642044	8.267178
5/15/2018 4:15	323100	12.373906	16.675964	8.18611
5/15/2018 4:30	324000	12.348504	16.660797	8.24401
5/15/2018 4:45	324900	12.368517	16.651428	8.198394
5/15/2018 5:00	325800	12.385039	16.687485	8.160734
5/15/2018 5:15	326700	12.409646	16.638428	8.104649
5/15/2018 5:30	327600	12.422701	16.677399	8.074892
5/15/2018 5:45	328500	12.436731	16.66153	8.042912
5/15/2018 6:00	329400	12.458876	16.638428	7.992439
5/15/2018 6:15	330300	12.457148	16.665848	7.996377
5/15/2018 6:30	331200	12.46646	16.667297	7.975151
5/15/2018 6:45	332100	12.465075	16.652863	7.97831
5/15/2018 7:00	333000	12.472408	16.679565	7.961594
5/15/2018 7:15	333900	12.471398	16.655029	7.963896
5/15/2018 7:30	334800	12.474792	16.642776	7.95616
5/15/2018 7:45	335700	12.469185	16.678848	7.968941
5/15/2018 8:00	336600	12.466247	16.664413	7.975638
5/15/2018 8:15	337500	12.462415	16.649261	7.984372
5/15/2018 8:30	338400	12.453173	16.688217	8.005438
5/15/2018 8:45	339300	12.437255	16.647095	8.041719

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/15/2018 9:00	340200	12.414666	16.67308	8.093205
5/15/2018 9:15	341100	12.394413	16.70697	8.139369
5/15/2018 9:30	342000	12.376564	16.657913	8.180053
5/15/2018 9:45	342900	12.351661	16.684601	8.236814
5/15/2018 10:00	343800	12.332588	16.665848	8.280287
5/15/2018 10:15	344700	12.311387	16.676666	8.32861
5/15/2018 10:30	345600	12.293126	16.683167	8.370234
5/15/2018 10:45	346500	12.271724	16.693268	8.419016
5/15/2018 11:00	347400	12.259193	16.657913	8.447577
5/15/2018 11:15	348300	12.308658	16.675964	8.334832
5/15/2018 11:30	349200	12.302876	16.650711	8.348011
5/15/2018 11:45	350100	12.293841	16.66008	8.368603
5/15/2018 12:00	351000	12.282563	16.669464	8.394309
5/15/2018 12:15	351900	12.267225	16.66803	8.429269
5/15/2018 12:30	352800	12.255367	16.649979	8.456297
5/15/2018 12:45	353700	12.238076	16.662964	8.495708
5/15/2018 13:00	354600	12.22521	16.676666	8.525034
5/15/2018 13:15	355500	12.208397	16.670166	8.563357
5/15/2018 13:30	356400	12.193116	16.674515	8.598186
5/15/2018 13:45	357300	12.177859	16.683167	8.632962
5/15/2018 14:00	358200	12.170494	16.659363	8.64975
5/15/2018 14:15	359100	12.162508	16.693268	8.667952
5/15/2018 14:30	360000	12.159468	16.647095	8.674882
5/15/2018 14:45	360900	12.164831	16.674515	8.662657
5/15/2018 15:00	361800	12.170368	16.653595	8.650036
5/15/2018 15:15	362700	12.178643	16.672348	8.631175
5/15/2018 15:30	363600	12.190557	16.66008	8.604019
5/15/2018 15:45	364500	12.203675	16.674515	8.57412
5/15/2018 16:00	365400	12.219565	16.675232	8.537901
5/15/2018 16:15	366300	12.235817	16.647827	8.500858
5/15/2018 16:30	367200	12.25755	16.652145	8.451322
5/15/2018 16:45	368100	12.271968	16.690384	8.418459
5/15/2018 17:00	369000	12.290009	16.655029	8.377339
5/15/2018 17:15	369900	12.308433	16.670898	8.335345
5/15/2018 17:30	370800	12.317634	16.66803	8.314373
5/15/2018 17:45	371700	12.344116	16.672348	8.254011
5/15/2018 18:00	372600	12.362962	16.668732	8.211056
5/15/2018 18:15	373500	12.37508	16.650711	8.183434
5/15/2018 18:30	374400	12.390695	16.653595	8.147844
5/15/2018 18:45	375300	12.398761	16.654327	8.129459
5/15/2018 19:00	376200	12.408082	16.643478	8.108213
5/15/2018 19:15	377100	12.352312	16.684601	8.23533

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/15/2018 19:30	378000	12.338387	16.66803	8.267071
5/15/2018 19:45	378900	12.331919	16.676666	8.281813
5/15/2018 20:00	379800	12.376348	16.671631	8.180546
5/15/2018 20:15	380700	12.379659	16.674515	8.172998
5/15/2018 20:30	381600	12.384161	16.674515	8.162737
5/15/2018 20:45	382500	12.427331	16.66008	8.064339
5/15/2018 21:00	383400	12.432674	16.657211	8.052159
5/15/2018 21:15	384300	12.438729	16.655746	8.038359
5/15/2018 21:30	385200	12.390781	16.670166	8.147647
5/15/2018 21:45	386100	12.337982	16.657913	8.267992
5/15/2018 22:00	387000	12.319136	16.681015	8.310949
5/15/2018 22:15	387900	12.310346	16.677399	8.330984
5/15/2018 22:30	388800	12.265319	16.681717	8.433615
5/15/2018 22:45	389700	12.232633	16.66153	8.508117
5/15/2018 23:00	390600	12.19245	16.683899	8.599706
5/15/2018 23:15	391500	12.170661	16.662964	8.649369
5/15/2018 23:30	392400	12.14476	16.688217	8.708405
5/15/2018 23:45	393300	12.14925	16.659363	8.698172
5/16/2018 0:00	394200	12.147165	16.668732	8.702923
5/16/2018 0:15	395100	12.129151	16.675232	8.743982
5/16/2018 0:30	396000	12.140183	16.650711	8.718837
5/16/2018 0:45	396900	12.136353	16.667297	8.727569
5/16/2018 1:00	397800	12.122738	16.652863	8.7586
5/16/2018 1:15	398700	12.119775	16.66153	8.765354
5/16/2018 1:30	399600	12.109943	16.699036	8.787764
5/16/2018 1:45	400500	12.097378	16.671631	8.816404
5/16/2018 2:00	401400	12.085361	16.677399	8.843795
5/16/2018 2:15	402300	12.06868	16.647095	8.881816
5/16/2018 2:30	403200	12.066778	16.695435	8.886149
5/16/2018 2:45	404100	12.072122	16.631943	8.87397
5/16/2018 3:00	405000	12.080252	16.647827	8.85544
5/16/2018 3:15	405900	12.1152	16.651428	8.775782
5/16/2018 3:30	406800	12.13703	16.66153	8.726026
5/16/2018 3:45	407700	12.15908	16.652863	8.675767
5/16/2018 4:00	408600	12.189345	16.674515	8.606782
5/16/2018 4:15	409500	12.221455	16.647827	8.533594
5/16/2018 4:30	410400	12.245399	16.676666	8.479017
5/16/2018 4:45	411300	12.271582	16.677399	8.41934
5/16/2018 5:00	412200	12.293975	16.658646	8.368299
5/16/2018 5:15	413100	12.3161	16.680283	8.317868
5/16/2018 5:30	414000	12.326093	16.653595	8.295092
5/16/2018 5:45	414900	12.349321	16.657211	8.242146

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/16/2018 6:00	415800	12.380606	16.663681	8.17084
5/16/2018 6:15	416700	12.390005	16.678116	8.149416
5/16/2018 6:30	417600	12.414882	16.670166	8.092714
5/16/2018 6:45	418500	12.4295	16.664413	8.059396
5/16/2018 7:00	419400	12.456166	16.67308	7.998614
5/16/2018 7:15	420300	12.417763	16.67308	8.086147
5/16/2018 7:30	421200	12.422945	16.665131	8.074336
5/16/2018 7:45	422100	12.433227	16.671631	8.050901
5/16/2018 8:00	423000	12.435004	16.643478	8.046849
5/16/2018 8:15	423900	12.433198	16.679565	8.050966
5/16/2018 8:30	424800	12.966801	16.66153	6.834721
5/16/2018 8:45	425700	13.014235	16.669464	6.726604
5/16/2018 9:00	426600	13.03658	16.670166	6.675672
5/16/2018 9:15	427500	13.044974	16.671631	6.656539
5/16/2018 9:30	428400	13.045898	16.649261	6.654433
5/16/2018 9:45	429300	13.044834	16.669464	6.656858
5/16/2018 10:00	430200	13.039766	16.655029	6.66841
5/16/2018 10:15	431100	13.032112	16.667297	6.685856
5/16/2018 10:30	432000	13.022227	16.66658	6.708386
5/16/2018 10:45	432900	13.013042	16.651428	6.729322
5/16/2018 11:00	433800	13.003037	16.665131	6.752126
5/16/2018 11:15	434700	12.994211	16.67308	6.772244
5/16/2018 11:30	435600	12.981077	16.646393	6.80218
5/16/2018 11:45	436500	12.969	16.663681	6.829709
5/16/2018 12:00	437400	12.952015	16.652863	6.868423
5/16/2018 12:15	438300	12.93271	16.669464	6.912425
5/16/2018 12:30	439200	12.917913	16.662964	6.94615
5/16/2018 12:45	440100	12.900741	16.651428	6.985292
5/16/2018 13:00	441000	12.889055	16.665848	7.011927
5/16/2018 13:15	441900	12.875819	16.683167	7.042096
5/16/2018 13:30	442800	12.861667	16.674515	7.074354
5/16/2018 13:45	443700	12.84898	16.675232	7.103271
5/16/2018 14:00	444600	12.323849	16.709854	8.300207
5/16/2018 14:15	445500	12.240172	16.697601	8.490932
5/16/2018 14:30	446400	12.191368	16.695435	8.602171
5/16/2018 14:45	447300	12.213593	16.678116	8.551513
5/16/2018 15:00	448200	12.191285	16.664413	8.60236
5/16/2018 15:15	449100	12.161303	16.675964	8.6707
5/16/2018 15:30	450000	12.14926	16.650711	8.69815
5/16/2018 15:45	450900	12.146525	16.657211	8.704382
5/16/2018 16:00	451800	12.149241	16.66803	8.698191
5/16/2018 16:15	452700	12.157548	16.663681	8.679257

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/16/2018 16:30	453600	12.167865	16.672348	8.655743
5/16/2018 16:45	454500	12.189529	16.668732	8.606362
5/16/2018 17:00	455400	12.211655	16.663681	8.555932
5/16/2018 17:15	456300	12.231825	16.674515	8.509957
5/16/2018 17:30	457200	12.260992	16.67308	8.443477
5/16/2018 17:45	458100	12.259365	16.642776	8.447186
5/16/2018 18:00	459000	12.267163	16.689667	8.429411
5/16/2018 18:15	459900	12.270249	16.66008	8.422377
5/16/2018 18:30	460800	12.282393	16.673782	8.394696
5/16/2018 18:45	461700	12.295001	16.673782	8.365959
5/16/2018 19:00	462600	12.307521	16.700485	8.337423
5/16/2018 19:15	463500	12.317844	16.671631	8.313892
5/16/2018 19:30	464400	12.282932	16.672348	8.393468
5/16/2018 19:45	465300	12.2843	16.660797	8.390351
5/16/2018 20:00	466200	12.285663	16.671631	8.387245
5/16/2018 20:15	467100	12.29298	16.685333	8.370565
5/16/2018 20:30	468000	12.28869	16.66803	8.380345
5/16/2018 20:45	468900	12.286497	16.653595	8.385343
5/16/2018 21:00	469800	12.276139	16.675232	8.408952
5/16/2018 21:15	470700	12.277406	16.671631	8.406065
5/16/2018 21:30	471600	12.266027	16.656479	8.431999
5/16/2018 21:45	472500	12.293905	16.657211	8.368457
5/16/2018 22:00	473400	12.28522	16.676666	8.388253
5/16/2018 22:15	474300	12.272339	16.696869	8.417614
5/16/2018 22:30	475200	12.263917	16.671631	8.43681
5/16/2018 22:45	476100	12.265445	16.686066	8.433328
5/16/2018 23:00	477000	12.272053	16.67308	8.418266
5/16/2018 23:15	477900	12.269116	16.652863	8.424959
5/16/2018 23:30	478800	12.240505	16.675964	8.490172
5/16/2018 23:45	479700	12.219688	16.665131	8.537621
5/17/2018 0:00	480600	12.192265	16.689667	8.600128
5/17/2018 0:15	481500	12.167583	16.66008	8.656384
5/17/2018 0:30	482400	12.157928	16.670166	8.678392
5/17/2018 0:45	483300	12.142015	16.684601	8.714664
5/17/2018 1:00	484200	12.119703	16.680283	8.765517
5/17/2018 1:15	485100	12.111703	16.672348	8.783752
5/17/2018 1:30	486000	12.106623	16.655029	8.795332
5/17/2018 1:45	486900	12.102128	16.688217	8.805576
5/17/2018 2:00	487800	12.100297	16.669464	8.809751
5/17/2018 2:15	488700	12.113284	16.646393	8.780149
5/17/2018 2:30	489600	12.107784	16.658646	8.792685
5/17/2018 2:45	490500	12.101157	16.66153	8.80779

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/17/2018 3:00	491400	12.103498	16.685333	8.802453
5/17/2018 3:15	492300	12.111229	16.662247	8.784833
5/17/2018 3:30	493200	12.122766	16.662247	8.758535
5/17/2018 3:45	494100	12.134419	16.686066	8.731975
5/17/2018 4:00	495000	12.152826	16.668732	8.69002
5/17/2018 4:15	495900	12.17603	16.676666	8.637131
5/17/2018 4:30	496800	12.20078	16.66658	8.580719
5/17/2018 4:45	497700	12.227995	16.700485	8.518687
5/17/2018 5:00	498600	12.273922	16.652145	8.414005
5/17/2018 5:15	499500	12.304451	16.656479	8.34442
5/17/2018 5:30	500400	12.324924	16.66803	8.297757
5/17/2018 5:45	501300	12.352502	16.636993	8.234898
5/17/2018 6:00	502200	12.350309	16.667297	8.239895
5/17/2018 6:15	503100	12.351864	16.663681	8.236352
5/17/2018 6:30	504000	12.355705	16.664413	8.227596
5/17/2018 6:45	504900	12.373806	16.670166	8.186338
5/17/2018 7:00	505800	12.390756	16.66008	8.147705
5/17/2018 7:15	506700	12.410695	16.630508	8.102257
5/17/2018 7:30	507600	12.426588	16.674515	8.066032
5/17/2018 7:45	508500	12.438773	16.663681	8.038259
5/17/2018 8:00	509400	12.449689	16.636276	8.013378
5/17/2018 8:15	510300	12.469909	16.657913	7.967291
5/17/2018 8:30	511200	12.476301	16.642044	7.952721
5/17/2018 8:45	512100	12.486051	16.66008	7.930499
5/17/2018 9:00	513000	12.491344	16.654327	7.918432
5/17/2018 9:15	513900	12.473068	16.656479	7.96009
5/17/2018 9:30	514800	12.459105	16.657211	7.991915
5/17/2018 9:45	515700	12.449312	16.653595	8.014236
5/17/2018 10:00	516600	12.432763	16.66803	8.051957
5/17/2018 10:15	517500	12.419247	16.656479	8.082766
5/17/2018 10:30	518400	12.400829	16.682449	8.124744
5/17/2018 10:45	519300	12.383706	16.678116	8.163774
5/17/2018 11:00	520200	12.367389	16.674515	8.200966
5/17/2018 11:15	521100	12.355122	16.691101	8.228927
5/17/2018 11:30	522000	12.344414	16.673782	8.253333
5/17/2018 11:45	522900	12.35989	16.686783	8.218058
5/17/2018 12:00	523800	12.359026	16.662247	8.220027
5/17/2018 12:15	524700	12.343387	16.677399	8.255674
5/17/2018 12:30	525600	12.332183	16.66658	8.281211
5/17/2018 12:45	526500	12.315224	16.664413	8.319866
5/17/2018 13:00	527400	12.298552	16.662964	8.357867
5/17/2018 13:15	528300	12.296051	16.657211	8.363566

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/17/2018 13:30	529200	12.268389	16.669464	8.426618
5/17/2018 13:45	530100	12.243402	16.67308	8.483568
5/17/2018 14:00	531000	12.225737	16.644211	8.523834
5/17/2018 14:15	531900	12.205996	16.664413	8.56883
5/17/2018 14:30	532800	12.188946	16.681015	8.607693
5/17/2018 14:45	533700	12.168245	16.682449	8.654875
5/17/2018 15:00	534600	12.154577	16.681717	8.686028
5/17/2018 15:15	535500	12.151171	16.681015	8.693793
5/17/2018 15:30	536400	12.14369	16.664413	8.710844
5/17/2018 15:45	537300	12.129382	16.659363	8.743456
5/17/2018 16:00	538200	12.125329	16.656479	8.752694
5/17/2018 16:15	539100	12.127026	16.674515	8.748827
5/17/2018 16:30	540000	12.126438	16.685333	8.750166
5/17/2018 16:45	540900	12.128384	16.662964	8.745732
5/17/2018 17:00	541800	12.140183	16.660797	8.718837
5/17/2018 17:15	542700	12.145603	16.660797	8.706484
5/17/2018 17:30	543600	12.164391	16.643478	8.663661
5/17/2018 17:45	544500	12.190401	16.676666	8.604375
5/17/2018 18:00	545400	12.207902	16.657913	8.564486
5/17/2018 18:15	546300	12.220634	16.677399	8.535466
5/17/2018 18:30	547200	12.242262	16.656479	8.486168
5/17/2018 18:45	548100	12.265078	16.658646	8.434164
5/17/2018 19:00	549000	12.287301	16.657913	8.383511
5/17/2018 19:15	549900	12.30935	16.675964	8.333254
5/17/2018 19:30	550800	12.324775	16.672348	8.298096
5/17/2018 19:45	551700	12.34114	16.650711	8.260796
5/17/2018 20:00	552600	12.354997	16.653595	8.229211
5/17/2018 20:15	553500	12.369779	16.654327	8.195518
5/17/2018 20:30	554400	12.386816	16.642044	8.156685
5/17/2018 20:45	555300	12.399616	16.678116	8.127509
5/17/2018 21:00	556200	12.395014	16.682449	8.138
5/17/2018 21:15	557100	12.397835	16.650711	8.13157
5/17/2018 21:30	558000	12.395321	16.665848	8.1373
5/17/2018 21:45	558900	12.390477	16.688217	8.14834
5/17/2018 22:00	559800	12.383925	16.648529	8.163274
5/17/2018 22:15	560700	12.373114	16.653595	8.187917
5/17/2018 22:30	561600	12.359926	16.675964	8.217975
5/17/2018 22:45	562500	12.35051	16.678116	8.239438
5/17/2018 23:00	563400	12.336521	16.670166	8.271322
5/17/2018 23:15	564300	12.31843	16.675964	8.312558
5/17/2018 23:30	565200	12.3054	16.644928	8.342257
5/17/2018 23:45	566100	12.293003	16.659363	8.370514

MW-16A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 538471 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 538471 Temperature (C)	Sensor: Pres(G) 69ft SN#: 538471 Level Depth To Water (ft)
5/18/2018 0:00	567000	12.279408	16.66153	8.4015
5/18/2018 0:15	567900	12.267919	16.645645	8.427689
5/18/2018 0:30	568800	12.254577	16.680283	8.458099
5/18/2018 0:45	569700	12.229761	16.675232	8.514662
5/18/2018 1:00	570600	12.219085	16.668732	8.538997
5/18/2018 1:15	571500	12.205656	16.683167	8.569604
5/18/2018 1:30	572400	12.191318	16.662247	8.602286
5/18/2018 1:45	573300	12.179938	16.683167	8.628223
5/18/2018 2:00	574200	12.17383	16.675964	8.642146
5/18/2018 2:15	575100	12.165899	16.681015	8.660222
5/18/2018 2:30	576000	12.16223	16.659363	8.668587
5/18/2018 2:45	576900	12.163074	16.644211	8.666663
5/18/2018 3:00	577800	12.166118	16.677399	8.659724
5/18/2018 3:15	578700	12.152212	16.655746	8.69142
5/18/2018 3:30	579600	12.158997	16.670166	8.675956
5/18/2018 3:45	580500	12.160977	16.688934	8.671441
5/18/2018 4:00	581400	12.173219	16.660797	8.643539
5/18/2018 4:15	582300	12.180779	16.652145	8.626308
5/18/2018 4:30	583200	12.202041	16.664413	8.577845
5/18/2018 4:45	584100	12.226074	16.651428	8.523066
5/18/2018 5:00	585000	12.2398	16.675964	8.491779
5/18/2018 5:15	585900	12.263121	16.652863	8.438624
5/18/2018 5:30	586800	12.293164	16.689667	8.370146
5/18/2018 5:45	587700	12.318708	16.648529	8.311923
5/18/2018 6:00	588600	12.357005	16.655029	8.224633
5/18/2018 6:15	589500	12.370103	16.637711	8.194779
5/18/2018 6:30	590400	12.410211	16.650711	8.103361
5/18/2018 6:45	591300	12.384271	16.698334	8.162487
5/18/2018 7:00	592200	12.391695	16.642776	8.145564
5/18/2018 7:15	593100	12.415564	16.665848	8.091161
5/18/2018 7:30	594000	12.988848	16.646393	6.784469
5/18/2018 7:45	594900	13.068382	16.634827	6.603185
5/18/2018 8:00	595800	13.121623	16.634109	6.481833
5/18/2018 8:15	596700	13.164571	16.653595	6.383942

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/4/2018 9:30	0	5.283568	17.18161	12.083113
5/4/2018 9:45	900	5.280178	17.126343	12.090839
5/4/2018 10:00	1800	5.278263	17.104523	12.095204
5/4/2018 10:15	2700	5.274573	17.11615	12.103615
5/4/2018 10:30	3600	5.270355	17.100143	12.113229
5/4/2018 10:45	4500	5.273652	17.100876	12.105714
5/4/2018 11:00	5400	5.270157	17.112518	12.113681
5/4/2018 11:15	6300	5.268647	17.113953	12.117122
5/4/2018 11:30	7200	5.264151	17.111069	12.12737
5/4/2018 11:45	8100	5.264688	17.054321	12.126144
5/4/2018 12:00	9000	5.260519	17.112518	12.135648
5/4/2018 12:15	9900	5.258149	17.127792	12.14105
5/4/2018 12:30	10800	5.257493	17.111771	12.142546
5/4/2018 12:45	11700	5.258276	17.148865	12.14076
5/4/2018 13:00	12600	5.255038	17.127792	12.148141
5/4/2018 13:15	13500	5.251897	17.1147	12.155301
5/4/2018 13:30	14400	5.25001	17.13652	12.159602
5/4/2018 13:45	15300	5.248459	17.108154	12.163137
5/4/2018 14:00	16200	5.248021	17.126343	12.164135
5/4/2018 14:15	17100	5.247104	17.039063	12.166226
5/4/2018 14:30	18000	5.242823	17.087067	12.175983
5/4/2018 14:45	18900	5.24118	17.095047	12.179728
5/4/2018 15:00	19800	5.243179	17.105972	12.175171
5/4/2018 15:15	20700	5.240727	17.09433	12.180759
5/4/2018 15:30	21600	5.237115	17.125595	12.188993
5/4/2018 15:45	22500	5.236244	17.086319	12.190978
5/4/2018 16:00	23400	5.236069	17.086319	12.191378
5/4/2018 16:15	24300	5.233794	17.13797	12.196564
5/4/2018 16:30	25200	5.233033	17.107422	12.198297
5/4/2018 16:45	26100	5.23112	17.098679	12.202659
5/4/2018 17:00	27000	5.230518	17.089966	12.204029
5/4/2018 17:15	27900	5.231012	17.098679	12.202903
5/4/2018 17:30	28800	5.228504	17.09433	12.208621
5/4/2018 17:45	29700	5.228709	17.081223	12.208153
5/4/2018 18:00	30600	5.227166	17.088501	12.21167
5/4/2018 18:15	31500	5.223179	17.124863	12.220758
5/4/2018 18:30	32400	5.22275	17.09433	12.221736
5/4/2018 18:45	33300	5.222987	17.078323	12.221195
5/4/2018 19:00	34200	5.224237	17.075424	12.218345
5/4/2018 19:15	35100	5.220533	17.06015	12.226788
5/4/2018 19:30	36000	5.221767	17.093597	12.223975
5/4/2018 19:45	36900	5.217905	17.122696	12.232779
5/4/2018 20:00	37800	5.220391	17.127792	12.227112

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/4/2018 20:15	38700	5.21766	17.080521	12.233337
5/4/2018 20:30	39600	5.215174	17.075424	12.239004
5/4/2018 20:45	40500	5.213567	17.058685	12.242667
5/4/2018 21:00	41400	5.213382	17.098679	12.243089
5/4/2018 21:15	42300	5.215407	17.07106	12.238472
5/4/2018 21:30	43200	5.213645	17.020142	12.242488
5/4/2018 21:45	44100	5.213825	17.098679	12.242078
5/4/2018 22:00	45000	5.211942	17.033966	12.246371
5/4/2018 22:15	45900	5.211049	17.080521	12.248406
5/4/2018 22:30	46800	5.209222	17.085602	12.25257
5/4/2018 22:45	47700	5.208255	17.019409	12.254774
5/4/2018 23:00	48600	5.207856	17.041962	12.255683
5/4/2018 23:15	49500	5.206801	17.067413	12.258087
5/4/2018 23:30	50400	5.206492	17.081223	12.258793
5/4/2018 23:45	51300	5.203977	17.084885	12.264525
5/5/2018 0:00	52200	5.204787	17.068146	12.262679
5/5/2018 0:15	53100	5.204067	17.07106	12.264319
5/5/2018 0:30	54000	5.201729	17.135056	12.26965
5/5/2018 0:45	54900	5.203241	17.113953	12.266202
5/5/2018 1:00	55800	5.197877	17.080521	12.278429
5/5/2018 1:15	56700	5.20146	17.073959	12.270262
5/5/2018 1:30	57600	5.200677	17.076141	12.272047
5/5/2018 1:45	58500	5.198144	17.070328	12.277821
5/5/2018 2:00	59400	5.198617	17.044159	12.276743
5/5/2018 2:15	60300	5.19563	17.073959	12.283551
5/5/2018 2:30	61200	5.192634	17.101593	12.29038
5/5/2018 2:45	62100	5.196992	17.089966	12.280446
5/5/2018 3:00	63000	5.194454	17.105225	12.286231
5/5/2018 3:15	63900	5.194844	17.09433	12.285341
5/5/2018 3:30	64800	5.193562	17.11615	12.288264
5/5/2018 3:45	65700	5.191836	17.096497	12.292197
5/5/2018 4:00	66600	5.190333	17.102341	12.295623
5/5/2018 4:15	67500	5.187595	17.064514	12.301864
5/5/2018 4:30	68400	5.187777	17.13797	12.301451
5/5/2018 4:45	69300	5.188708	17.07251	12.299327
5/5/2018 5:00	70200	5.18532	17.067413	12.307051
5/5/2018 5:15	71100	5.185665	17.097977	12.306265
5/5/2018 5:30	72000	5.184583	17.080521	12.308729
5/5/2018 5:45	72900	5.184418	17.123428	12.309106
5/5/2018 6:00	73800	5.183654	17.135056	12.310846
5/5/2018 6:15	74700	5.183773	17.110321	12.310577
5/5/2018 6:30	75600	5.18035	17.073242	12.318377
5/5/2018 6:45	76500	5.181073	17.076874	12.31673

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/5/2018 7:00	77400	5.179265	17.09433	12.320851
5/5/2018 7:15	78300	5.179797	17.095795	12.319638
5/5/2018 7:30	79200	5.177279	17.069595	12.325377
5/5/2018 7:45	80100	5.177429	17.058685	12.325036
5/5/2018 8:00	81000	5.176695	17.055786	12.32671
5/5/2018 8:15	81900	5.175251	17.052872	12.330002
5/5/2018 8:30	82800	5.176789	17.103058	12.326494
5/5/2018 8:45	83700	5.175447	17.070328	12.329555
5/5/2018 9:00	84600	5.175048	17.080521	12.330462
5/5/2018 9:15	85500	5.173277	17.057968	12.3345
5/5/2018 9:30	86400	5.172569	17.080521	12.336113
5/5/2018 9:45	87300	5.173835	17.07106	12.333228
5/5/2018 10:00	88200	5.168888	17.104523	12.344503
5/5/2018 10:15	89100	5.171196	17.119797	12.339244
5/5/2018 10:30	90000	5.16815	17.056503	12.346186
5/5/2018 10:45	90900	5.169376	17.08197	12.34339
5/5/2018 11:00	91800	5.167039	17.085602	12.348719
5/5/2018 11:15	92700	5.165391	17.066696	12.352474
5/5/2018 11:30	93600	5.164669	17.113953	12.35412
5/5/2018 11:45	94500	5.1621	17.099426	12.359975
5/5/2018 12:00	95400	5.163391	17.073242	12.357033
5/5/2018 12:15	96300	5.161611	17.082703	12.361091
5/5/2018 12:30	97200	5.160354	17.080521	12.363956
5/5/2018 12:45	98100	5.159725	16.999771	12.365389
5/5/2018 13:00	99000	5.159022	17.074692	12.36699
5/5/2018 13:15	99900	5.158581	17.087067	12.367997
5/5/2018 13:30	100800	5.156558	17.089966	12.372607
5/5/2018 13:45	101700	5.155905	17.049225	12.374095
5/5/2018 14:00	102600	5.154633	17.073242	12.376996
5/5/2018 14:15	103500	5.154741	17.075424	12.376748
5/5/2018 14:30	104400	5.155183	17.09288	12.375742
5/5/2018 14:45	105300	5.153152	17.1147	12.380372
5/5/2018 15:00	106200	5.152479	17.144516	12.381905
5/5/2018 15:15	107100	5.152879	17.07251	12.380994
5/5/2018 15:30	108000	5.150992	17.117615	12.385293
5/5/2018 15:45	108900	5.150099	17.084885	12.387329
5/5/2018 16:00	109800	5.148651	17.063049	12.39063
5/5/2018 16:15	110700	5.148752	17.076141	12.390399
5/5/2018 16:30	111600	5.146882	17.058685	12.394662
5/5/2018 16:45	112500	5.150047	17.101593	12.387447
5/5/2018 17:00	113400	5.147108	17.065231	12.394148
5/5/2018 17:15	114300	5.147196	17.079056	12.393947
5/5/2018 17:30	115200	5.146607	17.065231	12.395289

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/5/2018 17:45	116100	5.14595	17.065964	12.396786
5/5/2018 18:00	117000	5.145097	17.091415	12.398731
5/5/2018 18:15	117900	5.143504	17.058685	12.402361
5/5/2018 18:30	118800	5.143198	17.085602	12.40306
5/5/2018 18:45	119700	5.143079	17.041962	12.403331
5/5/2018 19:00	120600	5.142897	17.078323	12.403746
5/5/2018 19:15	121500	5.141805	17.065964	12.406235
5/5/2018 19:30	122400	5.141114	17.139435	12.407808
5/5/2018 19:45	123300	5.140015	17.093597	12.410314
5/5/2018 20:00	124200	5.140244	17.081223	12.409793
5/5/2018 20:15	125100	5.139596	17.089966	12.411269
5/5/2018 20:30	126000	5.139485	17.080521	12.411521
5/5/2018 20:45	126900	5.137813	17.052139	12.415334
5/5/2018 21:00	127800	5.138692	17.051407	12.41333
5/5/2018 21:15	128700	5.139771	17.068878	12.41087
5/5/2018 21:30	129600	5.137716	17.068878	12.415553
5/5/2018 21:45	130500	5.135356	17.064514	12.420934
5/5/2018 22:00	131400	5.136625	17.084885	12.41804
5/5/2018 22:15	132300	5.135374	17.096497	12.420892
5/5/2018 22:30	133200	5.135938	17.08197	12.419607
5/5/2018 22:45	134100	5.134552	17.096497	12.422766
5/5/2018 23:00	135000	5.136415	17.065964	12.418521
5/5/2018 23:15	135900	5.132062	17.119797	12.428442
5/5/2018 23:30	136800	5.132232	17.138702	12.428054
5/5/2018 23:45	137700	5.131571	17.065964	12.42956
5/6/2018 0:00	138600	5.133698	17.084152	12.424713
5/6/2018 0:15	139500	5.130713	17.054321	12.431518
5/6/2018 0:30	140400	5.131087	17.044861	12.430663
5/6/2018 0:45	141300	5.129818	17.081223	12.433557
5/6/2018 1:00	142200	5.130369	17.107422	12.432301
5/6/2018 1:15	143100	5.131826	17.054321	12.428978
5/6/2018 1:30	144000	5.130836	17.087067	12.431234
5/6/2018 1:45	144900	5.129639	17.090698	12.433965
5/6/2018 2:00	145800	5.125518	17.097244	12.443357
5/6/2018 2:15	146700	5.128435	17.054321	12.436708
5/6/2018 2:30	147600	5.128642	17.068878	12.436236
5/6/2018 2:45	148500	5.12517	17.08197	12.444151
5/6/2018 3:00	149400	5.127038	17.145233	12.439893
5/6/2018 3:15	150300	5.125592	17.091415	12.443188
5/6/2018 3:30	151200	5.12688	17.089249	12.440253
5/6/2018 3:45	152100	5.128018	17.079056	12.437658
5/6/2018 4:00	153000	5.126369	17.080521	12.441419
5/6/2018 4:15	153900	5.123583	17.036865	12.447768

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/6/2018 4:30	154800	5.124809	17.113953	12.444973
5/6/2018 4:45	155700	5.124673	17.079056	12.445284
5/6/2018 5:00	156600	5.12366	17.067413	12.447593
5/6/2018 5:15	157500	5.121757	17.100143	12.451931
5/6/2018 5:30	158400	5.124277	17.08197	12.446186
5/6/2018 5:45	159300	5.123032	17.049957	12.449023
5/6/2018 6:00	160200	5.12382	17.027405	12.447227
5/6/2018 6:15	161100	5.120852	17.041245	12.453994
5/6/2018 6:30	162000	5.123068	17.051407	12.448942
5/6/2018 6:45	162900	5.124766	17.049957	12.44507
5/6/2018 7:00	163800	5.120964	17.079788	12.453737
5/6/2018 7:15	164700	5.119309	17.071777	12.457508
5/6/2018 7:30	165600	5.122835	17.022324	12.449472
5/6/2018 7:45	166500	5.120604	17.010681	12.454558
5/6/2018 8:00	167400	5.122514	17.046326	12.450205
5/6/2018 8:15	168300	5.122282	17.056503	12.450734
5/6/2018 8:30	169200	5.119771	17.076874	12.456456
5/6/2018 8:45	170100	5.123392	17.096497	12.448203
5/6/2018 9:00	171000	5.121615	17.078323	12.452252
5/6/2018 9:15	171900	5.120652	17.091415	12.454448
5/6/2018 9:30	172800	5.12103	17.073959	12.453588
5/6/2018 9:45	173700	5.120933	17.063049	12.453809
5/6/2018 10:00	174600	5.121432	17.044159	12.452671
5/6/2018 10:15	175500	5.121199	17.069595	12.453202
5/6/2018 10:30	176400	5.119412	17.09288	12.457273
5/6/2018 10:45	177300	5.119553	17.071777	12.456954
5/6/2018 11:00	178200	5.120306	17.113251	12.455237
5/6/2018 11:15	179100	5.121967	17.052872	12.45145
5/6/2018 11:30	180000	5.120572	17.069595	12.454632
5/6/2018 11:45	180900	5.121379	17.078323	12.45279
5/6/2018 12:00	181800	5.119672	17.076874	12.456681
5/6/2018 12:15	182700	5.117496	17.02449	12.461643
5/6/2018 12:30	183600	5.120599	17.088501	12.45457
5/6/2018 12:45	184500	5.120556	17.074692	12.454667
5/6/2018 13:00	185400	5.117899	17.058685	12.460724
5/6/2018 13:15	186300	5.118242	17.048508	12.459941
5/6/2018 13:30	187200	5.117894	17.073242	12.460735
5/6/2018 13:45	188100	5.119759	17.078323	12.456485
5/6/2018 14:00	189000	5.119678	17.023773	12.456667
5/6/2018 14:15	189900	5.11934	17.036865	12.457438
5/6/2018 14:30	190800	5.120897	17.106689	12.453889
5/6/2018 14:45	191700	5.119072	17.093597	12.458049
5/6/2018 15:00	192600	5.119162	17.055054	12.457846

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/6/2018 15:15	193500	5.120508	17.087067	12.454776
5/6/2018 15:30	194400	5.117336	17.065231	12.462006
5/6/2018 15:45	195300	5.119854	17.07106	12.456267
5/6/2018 16:00	196200	5.122357	17.091415	12.450562
5/6/2018 16:15	197100	5.11851	17.041962	12.45933
5/6/2018 16:30	198000	5.117336	17.084885	12.462006
5/6/2018 16:45	198900	5.118402	17.0616	12.459578
5/6/2018 17:00	199800	5.1164	17.07106	12.464141
5/6/2018 17:15	200700	5.118347	17.045593	12.459702
5/6/2018 17:30	201600	5.11837	17.037598	12.45965
5/6/2018 17:45	202500	5.118544	17.091415	12.459254
5/6/2018 18:00	203400	5.118748	17.052872	12.458789
5/6/2018 18:15	204300	5.116051	17.036865	12.464936
5/6/2018 18:30	205200	5.119848	17.048508	12.456282
5/6/2018 18:45	206100	5.118984	17.084152	12.458251
5/6/2018 19:00	207000	5.11862	17.055054	12.45908
5/6/2018 19:15	207900	5.11733	17.074692	12.462021
5/6/2018 19:30	208800	5.119008	17.07106	12.458196
5/6/2018 19:45	209700	5.118367	17.055054	12.459656
5/6/2018 20:00	210600	5.1157	17.069595	12.465736
5/6/2018 20:15	211500	5.117229	17.109604	12.46225
5/6/2018 20:30	212400	5.115745	17.089249	12.465633
5/6/2018 20:45	213300	5.116385	17.073959	12.464175
5/6/2018 21:00	214200	5.117392	17.041245	12.46188
5/6/2018 21:15	215100	5.11498	17.075424	12.467376
5/6/2018 21:30	216000	5.116717	17.060867	12.463418
5/6/2018 21:45	216900	5.114264	17.089249	12.469007
5/6/2018 22:00	217800	5.115604	17.069595	12.465954
5/6/2018 22:15	218700	5.116385	17.067413	12.464175
5/6/2018 22:30	219600	5.11724	17.063049	12.462224
5/6/2018 22:45	220500	5.113018	17.077606	12.471849
5/6/2018 23:00	221400	5.115706	17.101593	12.465722
5/6/2018 23:15	222300	5.116262	17.037598	12.464454
5/6/2018 23:30	223200	5.115975	17.103775	12.465108
5/6/2018 23:45	224100	5.114206	17.073242	12.469141
5/7/2018 0:00	225000	5.113325	17.054321	12.471149
5/7/2018 0:15	225900	5.115667	17.040512	12.46581
5/7/2018 0:30	226800	5.113841	17.059418	12.469973
5/7/2018 0:45	227700	5.11455	17.036148	12.468357
5/7/2018 1:00	228600	5.11416	17.088501	12.469246
5/7/2018 1:15	229500	5.115294	17.06015	12.466662
5/7/2018 1:30	230400	5.112433	17.073959	12.473182
5/7/2018 1:45	231300	5.112219	17.065964	12.47367

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 2:00	232200	5.112777	17.109604	12.472399
5/7/2018 2:15	233100	5.114223	17.103775	12.469103
5/7/2018 2:30	234000	5.113213	17.09288	12.471405
5/7/2018 2:45	234900	5.112569	17.113953	12.472873
5/7/2018 3:00	235800	5.111578	17.076141	12.475131
5/7/2018 3:15	236700	5.110709	17.089966	12.477111
5/7/2018 3:30	237600	5.112842	17.062332	12.472251
5/7/2018 3:45	238500	5.108803	17.056503	12.481455
5/7/2018 4:00	239400	5.11428	17.07251	12.468971
5/7/2018 4:15	240300	5.112747	17.062332	12.472466
5/7/2018 4:30	241200	5.11395	17.100143	12.469725
5/7/2018 4:45	242100	5.109864	17.076141	12.479037
5/7/2018 5:00	243000	5.110348	17.071777	12.477934
5/7/2018 5:15	243900	5.110524	17.108154	12.477532
5/7/2018 5:30	244800	5.110841	17.076874	12.476811
5/7/2018 5:45	245700	5.110081	17.07251	12.478543
5/7/2018 6:00	246600	5.109395	17.065231	12.480106
5/7/2018 6:15	247500	5.11178	17.068878	12.47467
5/7/2018 6:30	248400	5.109248	17.078323	12.480441
5/7/2018 6:45	249300	5.109092	17.068878	12.480797
5/7/2018 7:00	250200	5.108548	17.047775	12.482038
5/7/2018 7:15	251100	5.108006	17.0616	12.483274
5/7/2018 7:30	252000	5.106595	17.087784	12.486488
5/7/2018 7:45	252900	5.109622	17.095047	12.479589
5/7/2018 8:00	253800	5.108333	17.060867	12.482527
5/7/2018 8:15	254700	5.1079	17.089966	12.483514
5/7/2018 8:30	255600	5.108173	17.076141	12.482891
5/7/2018 8:45	256500	5.108215	17.080521	12.482796
5/7/2018 9:00	257400	5.105315	17.041245	12.489406
5/7/2018 9:15	258300	5.108029	17.07251	12.48322
5/7/2018 9:30	259200	5.108029	17.077606	12.48322
5/7/2018 9:45	260100	5.108159	17.068146	12.482924
5/7/2018 10:00	261000	5.106458	17.055054	12.4868
5/7/2018 10:15	261900	5.108772	17.111069	12.481525
5/7/2018 10:30	262800	5.107491	17.042679	12.484446
5/7/2018 10:45	263700	5.10787	17.121246	12.483583
5/7/2018 11:00	264600	5.105618	17.036865	12.488716
5/7/2018 11:15	265500	5.106474	17.052139	12.486765
5/7/2018 11:30	266400	5.108092	17.064514	12.483077
5/7/2018 11:45	267300	5.106817	17.053604	12.485982
5/7/2018 12:00	268200	5.106853	17.055054	12.485899
5/7/2018 12:15	269100	5.107757	17.080521	12.483841
5/7/2018 12:30	270000	5.107179	17.087067	12.485158

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 12:45	270900	5.105507	17.055054	12.488969
5/7/2018 13:00	271800	5.107196	17.01796	12.485119
5/7/2018 13:15	272700	5.104917	17.05069	12.490314
5/7/2018 13:30	273600	5.105979	17.044861	12.487891
5/7/2018 13:45	274500	5.106328	17.045593	12.487096
5/7/2018 14:00	275400	5.104168	17.026688	12.492021
5/7/2018 14:15	276300	5.103851	17.045593	12.492743
5/7/2018 14:30	277200	5.103948	17.057236	12.492523
5/7/2018 14:45	278100	5.1059	17.055786	12.488073
5/7/2018 15:00	279000	5.103844	17.093597	12.49276
5/7/2018 15:15	279900	5.104786	17.037598	12.490612
5/7/2018 15:30	280800	5.105295	17.026688	12.489452
5/7/2018 15:45	281700	5.1027	17.054321	12.495366
5/7/2018 16:00	282600	5.103415	17.020874	12.493735
5/7/2018 16:15	283500	5.103952	17.031784	12.492512
5/7/2018 16:30	284400	5.102567	17.029587	12.49567
5/7/2018 16:45	285300	5.103271	17.065964	12.494065
5/7/2018 17:00	286200	5.102703	17.087067	12.495359
5/7/2018 17:15	287100	5.101848	16.976486	12.49731
5/7/2018 17:30	288000	5.102466	17.055054	12.495901
5/7/2018 17:45	288900	5.104753	17.055054	12.490686
5/7/2018 18:00	289800	5.103292	17.015045	12.494016
5/7/2018 18:15	290700	5.103367	17.066696	12.493847
5/7/2018 18:30	291600	5.104516	17.052872	12.491227
5/7/2018 18:45	292500	5.100695	17.034683	12.499937
5/7/2018 19:00	293400	5.103875	17.02887	12.492688
5/7/2018 19:15	294300	5.103405	17.030334	12.493759
5/7/2018 19:30	295200	5.10298	17.021591	12.494729
5/7/2018 19:45	296100	5.100217	17.043411	12.501025
5/7/2018 20:00	297000	5.100499	17.078323	12.500382
5/7/2018 20:15	297900	5.10109	17.017227	12.499036
5/7/2018 20:30	298800	5.100082	17.060867	12.501333
5/7/2018 20:45	299700	5.09971	17.017227	12.502183
5/7/2018 21:00	300600	5.102592	17.066696	12.495611
5/7/2018 21:15	301500	5.09953	17.037598	12.502591
5/7/2018 21:30	302400	5.099259	17.084152	12.50321
5/7/2018 21:45	303300	5.102297	17.042679	12.496285
5/7/2018 22:00	304200	5.099847	17.066696	12.50187
5/7/2018 22:15	305100	5.100636	17.063049	12.50007
5/7/2018 22:30	306000	5.101242	17.108871	12.49869
5/7/2018 22:45	306900	5.097092	17.065231	12.508148
5/7/2018 23:00	307800	5.099756	17.041962	12.502076
5/7/2018 23:15	308700	5.100018	17.044159	12.50148

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 23:30	309600	5.100844	17.076141	12.499596
5/7/2018 23:45	310500	5.096971	17.089249	12.508426
5/8/2018 0:00	311400	5.097836	17.077606	12.506452
5/8/2018 0:15	312300	5.098484	17.01796	12.504976
5/8/2018 0:30	313200	5.09928	17.062332	12.50316
5/8/2018 0:45	314100	5.09928	16.993942	12.50316
5/8/2018 1:00	315000	5.098464	17.049225	12.505022
5/8/2018 1:15	315900	5.100282	17.01651	12.500877
5/8/2018 1:30	316800	5.096963	17.034683	12.508443
5/8/2018 1:45	317700	5.098453	17.032501	12.505047
5/8/2018 2:00	318600	5.096863	17.049957	12.508671
5/8/2018 2:15	319500	5.097067	17.071777	12.508206
5/8/2018 2:30	320400	5.09655	17.011414	12.509383
5/8/2018 2:45	321300	5.095715	17.003403	12.511289
5/8/2018 3:00	322200	5.096586	17.051407	12.509302
5/8/2018 3:15	323100	5.097978	17.057968	12.50613
5/8/2018 3:30	324000	5.095976	17.048508	12.510692
5/8/2018 3:45	324900	5.096268	17.064514	12.510028
5/8/2018 4:00	325800	5.095394	16.979401	12.512019
5/8/2018 4:15	326700	5.09457	17.011414	12.513898
5/8/2018 4:30	327600	5.096684	17.033966	12.50908
5/8/2018 4:45	328500	5.094748	17.00705	12.513493
5/8/2018 5:00	329400	5.097634	17.020874	12.506913
5/8/2018 5:15	330300	5.092824	17.065964	12.517878
5/8/2018 5:30	331200	5.096179	17.073959	12.51023
5/8/2018 5:45	332100	5.093955	17.053604	12.515299
5/8/2018 6:00	333000	5.094893	17.00705	12.51316
5/8/2018 6:15	333900	5.094409	17.01651	12.514264
5/8/2018 6:30	334800	5.095136	17.041962	12.512607
5/8/2018 6:45	335700	5.095377	17.035416	12.512058
5/8/2018 7:00	336600	5.092865	17.065964	12.517783
5/8/2018 7:15	337500	5.093066	17.042679	12.517324
5/8/2018 7:30	338400	5.093925	17.041962	12.515368
5/8/2018 7:45	339300	5.093065	17.057236	12.517327
5/8/2018 8:00	340200	5.090812	16.996124	12.522463
5/8/2018 8:15	341100	5.091687	17.02887	12.520468
5/8/2018 8:30	342000	5.091653	17.02887	12.520546
5/8/2018 8:45	342900	5.092971	17.063782	12.517542
5/8/2018 9:00	343800	5.090749	17.023056	12.522607
5/8/2018 9:15	344700	5.091582	17.065964	12.520707
5/8/2018 9:30	345600	5.090865	17.06015	12.522342
5/8/2018 9:45	346500	5.091437	17.058685	12.521037
5/8/2018 10:00	347400	5.092519	17.073959	12.518572

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/8/2018 10:15	348300	5.090518	17.062332	12.523132
5/8/2018 10:30	349200	5.089839	17.032501	12.524679
5/8/2018 10:45	350100	5.091135	17.047775	12.521727
5/8/2018 11:00	351000	5.089919	17.076141	12.524498
5/8/2018 11:15	351900	5.089287	17.065231	12.525939
5/8/2018 11:30	352800	5.089138	17.041245	12.526279
5/8/2018 11:45	353700	5.088532	17.045593	12.527658
5/8/2018 12:00	354600	5.090088	17.011414	12.524114
5/8/2018 12:15	355500	5.089823	17.07106	12.524717
5/8/2018 12:30	356400	5.087503	17.045593	12.530005
5/8/2018 12:45	357300	5.090457	17.020874	12.523273
5/8/2018 13:00	358200	5.089122	17.013596	12.526316
5/8/2018 13:15	359100	5.090482	17.063782	12.523214
5/8/2018 13:30	360000	5.090612	16.984482	12.522918
5/8/2018 13:45	360900	5.089334	17.035416	12.525833
5/8/2018 14:00	361800	5.089293	17.02887	12.525927
5/8/2018 14:15	362700	5.089612	17.057236	12.525198
5/8/2018 14:30	363600	5.091455	17.051407	12.520997
5/8/2018 14:45	364500	5.087983	17.084885	12.528911
5/8/2018 15:00	365400	5.088832	17.079056	12.526975
5/8/2018 15:15	366300	5.08964	17.059418	12.525135
5/8/2018 15:30	367200	5.089334	17.048508	12.525833
5/8/2018 15:45	368100	5.089543	17.047775	12.525355
5/8/2018 16:00	369000	5.090933	17.0616	12.522187
5/8/2018 16:15	369900	5.088399	17.002686	12.527963
5/8/2018 16:30	370800	5.087159	17.079788	12.53079
5/8/2018 16:45	371700	5.087568	17.030334	12.529857
5/8/2018 17:00	372600	5.088515	17.033234	12.527698
5/8/2018 17:15	373500	5.088151	17.057968	12.528528
5/8/2018 17:30	374400	5.087848	17.044861	12.52922
5/8/2018 17:45	375300	5.090845	17.046326	12.522388
5/8/2018 18:00	376200	5.088605	17.041245	12.527493
5/8/2018 18:15	377100	5.090898	17.052139	12.522268
5/8/2018 18:30	378000	5.085803	17.052139	12.53388
5/8/2018 18:45	378900	5.08975	17.038315	12.524883
5/8/2018 19:00	379800	5.091127	17.007767	12.521744
5/8/2018 19:15	380700	5.088707	17.059418	12.52726
5/8/2018 19:30	381600	5.091511	17.065231	12.520869
5/8/2018 19:45	382500	5.086429	17.031784	12.532453
5/8/2018 20:00	383400	5.089276	17.013596	12.525965
5/8/2018 20:15	384300	5.088234	17.028152	12.528337
5/8/2018 20:30	385200	5.08839	17.029587	12.527983
5/8/2018 20:45	386100	5.087808	17.071777	12.52931

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/8/2018 21:00	387000	5.090573	17.015778	12.523007
5/8/2018 21:15	387900	5.088986	17.001221	12.526624
5/8/2018 21:30	388800	5.090079	17.033966	12.524133
5/8/2018 21:45	389700	5.088649	17.057968	12.527393
5/8/2018 22:00	390600	5.088594	17.003403	12.527517
5/8/2018 22:15	391500	5.088433	17.038315	12.527884
5/8/2018 22:30	392400	5.088181	17.025238	12.52846
5/8/2018 22:45	393300	5.086874	17.041962	12.531439
5/8/2018 23:00	394200	5.08975	17.092148	12.524883
5/8/2018 23:15	395100	5.08568	17.034683	12.534161
5/8/2018 23:30	396000	5.087632	17.047043	12.529711
5/8/2018 23:45	396900	5.088858	17.02597	12.526917
5/9/2018 0:00	397800	5.086713	17.031052	12.531806
5/9/2018 0:15	398700	5.089164	17.069595	12.526219
5/9/2018 0:30	399600	5.089713	17.041245	12.524967
5/9/2018 0:45	400500	5.088015	17.06015	12.528839
5/9/2018 1:00	401400	5.087529	17.032501	12.529945
5/9/2018 1:15	402300	5.085913	17.034683	12.533629
5/9/2018 1:30	403200	5.087155	17.059418	12.530799
5/9/2018 1:45	404100	5.087778	17.026688	12.529379
5/9/2018 2:00	405000	5.087254	17.037598	12.530574
5/9/2018 2:15	405900	5.085537	17.079788	12.534487
5/9/2018 2:30	406800	5.086322	17.028152	12.532696
5/9/2018 2:45	407700	5.086473	17.049225	12.532351
5/9/2018 3:00	408600	5.086549	16.995407	12.53218
5/9/2018 3:15	409500	5.084337	17.005585	12.537221
5/9/2018 3:30	410400	5.084873	17.057968	12.535999
5/9/2018 3:45	411300	5.085074	17.02449	12.535541
5/9/2018 4:00	412200	5.088116	17.056503	12.528607
5/9/2018 4:15	413100	5.084666	17.042679	12.536472
5/9/2018 4:30	414000	5.088953	17.065964	12.5267
5/9/2018 4:45	414900	5.086807	17.003403	12.531591
5/9/2018 5:00	415800	5.086883	17.010681	12.531419
5/9/2018 5:15	416700	5.083076	17.048508	12.540096
5/9/2018 5:30	417600	5.085842	17.039063	12.533792
5/9/2018 5:45	418500	5.086014	17.029587	12.5334
5/9/2018 6:00	419400	5.085567	17.055786	12.534417
5/9/2018 6:15	420300	5.085044	17.02887	12.53561
5/9/2018 6:30	421200	5.084827	17.048508	12.536103
5/9/2018 6:45	422100	5.08321	17.084885	12.539791
5/9/2018 7:00	423000	5.086776	17.017227	12.531663
5/9/2018 7:15	423900	5.084169	17.008499	12.537603
5/9/2018 7:30	424800	5.084894	17.043411	12.535952

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/9/2018 7:45	425700	5.084797	17.001221	12.536173
5/9/2018 8:00	426600	5.086357	17.084152	12.532617
5/9/2018 8:15	427500	5.086155	17.0616	12.533078
5/9/2018 8:30	428400	5.085977	17.047043	12.533484
5/9/2018 8:45	429300	5.084315	17.014328	12.537271
5/9/2018 9:00	430200	5.084981	17.07251	12.535753
5/9/2018 9:15	431100	5.084179	17.011414	12.537581
5/9/2018 9:30	432000	5.084956	17.001953	12.53581
5/9/2018 9:45	432900	5.086216	17.012146	12.532939
5/9/2018 10:00	433800	5.084387	17.036865	12.537107
5/9/2018 10:15	434700	5.086218	17.054321	12.532934
5/9/2018 10:30	435600	5.084519	17.014328	12.536806
5/9/2018 10:45	436500	5.085203	17.008499	12.535247
5/9/2018 11:00	437400	5.084873	17.049225	12.535999
5/9/2018 11:15	438300	5.085323	16.988129	12.534973
5/9/2018 11:30	439200	5.084827	17.011414	12.536103
5/9/2018 11:45	440100	5.085116	17.055786	12.535445
5/9/2018 12:00	441000	5.082656	17.037598	12.541053
5/9/2018 12:15	441900	5.082994	17.046326	12.540283
5/9/2018 12:30	442800	5.083928	17.036148	12.538154
5/9/2018 12:45	443700	5.084731	17.022324	12.536324
5/9/2018 13:00	444600	5.085501	17.054321	12.534569
5/9/2018 13:15	445500	5.08366	17.036865	12.538764
5/9/2018 13:30	446400	5.083357	17.047775	12.539455
5/9/2018 13:45	447300	5.083138	17.040512	12.539955
5/9/2018 14:00	448200	5.085455	17.059418	12.534674
5/9/2018 14:15	449100	5.084633	17.045593	12.536547
5/9/2018 14:30	450000	5.085289	17.035416	12.535051
5/9/2018 14:45	450900	5.084571	17.05069	12.536688
5/9/2018 15:00	451800	5.082967	17.055786	12.540344
5/9/2018 15:15	452700	5.082346	17.076874	12.541759
5/9/2018 15:30	453600	5.082492	17.065231	12.541427
5/9/2018 15:45	454500	5.084219	17.039063	12.537489
5/9/2018 16:00	455400	5.083984	17.078323	12.538026
5/9/2018 16:15	456300	5.085598	17.015045	12.534348
5/9/2018 16:30	457200	5.083105	17.045593	12.54003
5/9/2018 16:45	458100	5.085142	17.041245	12.535387
5/9/2018 17:00	459000	5.085557	17.015778	12.53444
5/9/2018 17:15	459900	5.082626	17.032501	12.541121
5/9/2018 17:30	460800	5.083171	17.01651	12.539878
5/9/2018 17:45	461700	5.084914	17.022324	12.535906
5/9/2018 18:00	462600	5.085835	17.092148	12.533808
5/9/2018 18:15	463500	5.086946	17.03978	12.531274

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/9/2018 18:30	464400	5.085842	17.045593	12.533792
5/9/2018 18:45	465300	5.085621	17.031052	12.534294
5/9/2018 19:00	466200	5.082554	17.023773	12.541286
5/9/2018 19:15	467100	5.084001	17.005585	12.537988
5/9/2018 19:30	468000	5.084311	17.01796	12.537282
5/9/2018 19:45	468900	5.08411	17.052872	12.537738
5/9/2018 20:00	469800	5.08497	17.053604	12.535777
5/9/2018 20:15	470700	5.085423	17.056503	12.534747
5/9/2018 20:30	471600	5.083735	17.049225	12.538594
5/9/2018 20:45	472500	5.084617	17.055054	12.536584
5/9/2018 21:00	473400	5.084521	17.064514	12.536801
5/9/2018 21:15	474300	5.086648	17.032501	12.531955
5/9/2018 21:30	475200	5.084211	16.999039	12.537508
5/9/2018 21:45	476100	5.084634	17.006317	12.536544
5/9/2018 22:00	477000	5.086494	17.030334	12.532304
5/9/2018 22:15	477900	5.08501	17.031784	12.535688
5/9/2018 22:30	478800	5.084175	17.049957	12.53759
5/9/2018 22:45	479700	5.085348	17.019409	12.534918
5/9/2018 23:00	480600	5.085074	17.019409	12.535541
5/9/2018 23:15	481500	5.084593	17.039063	12.536638
5/9/2018 23:30	482400	5.081275	17.027405	12.544202
5/9/2018 23:45	483300	5.084554	17.002686	12.536728
5/10/2018 0:00	484200	5.087808	16.998322	12.52931
5/10/2018 0:15	485100	5.084175	17.021591	12.53759
5/10/2018 0:30	486000	5.086604	17.044159	12.532054
5/10/2018 0:45	486900	5.084802	17.046326	12.536162
5/10/2018 1:00	487800	5.08552	17.019409	12.534526
5/10/2018 1:15	488700	5.083895	17.01796	12.538228
5/10/2018 1:30	489600	5.08552	17.038315	12.534526
5/10/2018 1:45	490500	5.084294	17.028152	12.537318
5/10/2018 2:00	491400	5.085181	17.001221	12.535297
5/10/2018 2:15	492300	5.085803	17.019409	12.53388
5/10/2018 2:30	493200	5.085605	17.047043	12.534332
5/10/2018 2:45	494100	5.08642	17.0616	12.532475
5/10/2018 3:00	495000	5.082903	17.073242	12.54049
5/10/2018 3:15	495900	5.084465	17.037598	12.536929
5/10/2018 3:30	496800	5.08501	17.030334	12.535688
5/10/2018 3:45	497700	5.086614	17.082703	12.532032
5/10/2018 4:00	498600	5.084802	16.988861	12.536161
5/10/2018 4:15	499500	5.085102	17.033966	12.535479
5/10/2018 4:30	500400	5.083589	16.983765	12.538927
5/10/2018 4:45	501300	5.083519	17.00705	12.539086
5/10/2018 5:00	502200	5.084617	17.018692	12.536584

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/10/2018 5:15	503100	5.084146	17.032501	12.537656
5/10/2018 5:30	504000	5.087155	17.001221	12.530799
5/10/2018 5:45	504900	5.083606	17.063782	12.538887
5/10/2018 6:00	505800	5.084046	17.009949	12.537884
5/10/2018 6:15	506700	5.084634	17.025238	12.536544
5/10/2018 6:30	507600	5.083767	17.025238	12.538521
5/10/2018 6:45	508500	5.08552	17.03978	12.534526
5/10/2018 7:00	509400	5.085649	16.99176	12.534232
5/10/2018 7:15	510300	5.08453	17.022324	12.536781
5/10/2018 7:30	511200	5.08368	17.00705	12.538718
5/10/2018 7:45	512100	5.08642	17.020874	12.532475
5/10/2018 8:00	513000	5.085454	16.987396	12.534677
5/10/2018 8:15	513900	5.084019	17.02597	12.537947
5/10/2018 8:30	514800	5.084731	17.035416	12.536324
5/10/2018 8:45	515700	5.0859	17.007767	12.533658
5/10/2018 9:00	516600	5.085181	17.000504	12.535297
5/10/2018 9:15	517500	5.084348	16.96994	12.537197
5/10/2018 9:30	518400	5.084723	16.999771	12.536341
5/10/2018 9:45	519300	5.085067	17.008499	12.535558
5/10/2018 10:00	520200	5.084489	17.012863	12.536876
5/10/2018 10:15	521100	5.084867	17.032501	12.536014
5/10/2018 10:30	522000	5.083831	17.023056	12.538375
5/10/2018 10:45	522900	5.082885	16.988861	12.540531
5/10/2018 11:00	523800	5.085913	17.065231	12.533629
5/10/2018 11:15	524700	5.083584	17.030334	12.538939
5/10/2018 11:30	525600	5.085762	17.019409	12.533974
5/10/2018 11:45	526500	5.085798	16.990311	12.533891
5/10/2018 12:00	527400	5.084636	17.015778	12.536541
5/10/2018 12:15	528300	5.083138	16.977936	12.539955
5/10/2018 12:30	529200	5.085792	17.018692	12.533905
5/10/2018 12:45	530100	5.085454	17.01651	12.534677
5/10/2018 13:00	531000	5.086818	17.052872	12.531567
5/10/2018 13:15	531900	5.084593	17.044159	12.536638
5/10/2018 13:30	532800	5.085672	17.070328	12.534179
5/10/2018 13:45	533700	5.085946	17.08197	12.533554
5/10/2018 14:00	534600	5.086525	16.972122	12.532233
5/10/2018 14:15	535500	5.084517	17.00705	12.53681
5/10/2018 14:30	536400	5.085549	17.02449	12.534458
5/10/2018 14:45	537300	5.085044	17.051407	12.53561
5/10/2018 15:00	538200	5.085835	17.045593	12.533808
5/10/2018 15:15	539100	5.084776	17.031784	12.536221
5/10/2018 15:30	540000	5.08546	17.078323	12.534662
5/10/2018 15:45	540900	5.084139	17.032501	12.537673

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/10/2018 16:00	541800	5.08778	17.086319	12.529374
5/10/2018 16:15	542700	5.085187	17.06015	12.535284
5/10/2018 16:30	543600	5.087435	17.032501	12.530161
5/10/2018 16:45	544500	5.086827	16.972839	12.531546
5/10/2018 17:00	545400	5.084169	17.02449	12.537603
5/10/2018 17:15	546300	5.087221	17.00705	12.530647
5/10/2018 17:30	547200	5.085493	17.031784	12.534588
5/10/2018 17:45	548100	5.087234	17.006317	12.53062
5/10/2018 18:00	549000	5.087621	17.068146	12.529737
5/10/2018 18:15	549900	5.086809	17.009232	12.531587
5/10/2018 18:30	550800	5.08806	17.015778	12.528736
5/10/2018 18:45	551700	5.086942	17.02449	12.531284
5/10/2018 19:00	552600	5.086874	16.972122	12.531439
5/10/2018 19:15	553500	5.087081	17.020142	12.530967
5/10/2018 19:30	554400	5.087769	17.031052	12.529399
5/10/2018 19:45	555300	5.08696	16.989578	12.531243
5/10/2018 20:00	556200	5.086699	16.998322	12.531838
5/10/2018 20:15	557100	5.087962	16.987396	12.528958
5/10/2018 20:30	558000	5.086087	17.009232	12.533232
5/10/2018 20:45	558900	5.086872	17.001221	12.531445
5/10/2018 21:00	559800	5.090435	17.017227	12.523322
5/10/2018 21:15	560700	5.088591	17.042679	12.527525
5/10/2018 21:30	561600	5.088671	17.053604	12.527343
5/10/2018 21:45	562500	5.087674	17.055054	12.529616
5/10/2018 22:00	563400	5.088359	17.044159	12.528054
5/10/2018 22:15	564300	5.089653	17.012863	12.525105
5/10/2018 22:30	565200	5.084627	17.025238	12.53656
5/10/2018 22:45	566100	5.086356	17.010681	12.532619
5/10/2018 23:00	567000	5.08856	17.004868	12.527596
5/10/2018 23:15	567900	5.088617	17.057968	12.527467
5/10/2018 23:30	568800	5.090102	17.020874	12.52408
5/10/2018 23:45	569700	5.088245	16.964844	12.528313
5/11/2018 0:00	570600	5.08801	17.001953	12.52885
5/11/2018 0:15	571500	5.088528	17.01651	12.52767
5/11/2018 0:30	572400	5.088277	17.038315	12.528241
5/11/2018 0:45	573300	5.08606	17.02887	12.533295
5/11/2018 1:00	574200	5.088875	16.998322	12.526878
5/11/2018 1:15	575100	5.089725	17.030334	12.524941
5/11/2018 1:30	576000	5.089903	17.005585	12.524535
5/11/2018 1:45	576900	5.08813	17.021591	12.528577
5/11/2018 2:00	577800	5.08577	16.988861	12.533956
5/11/2018 2:15	578700	5.085926	17.019409	12.5336
5/11/2018 2:30	579600	5.087826	17.005585	12.529269

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/11/2018 2:45	580500	5.086969	17.014328	12.531222
5/11/2018 3:00	581400	5.087901	17.007767	12.529098
5/11/2018 3:15	582300	5.087826	17.043411	12.529269
5/11/2018 3:30	583200	5.086614	17.02449	12.532032
5/11/2018 3:45	584100	5.087144	17.019409	12.530824
5/11/2018 4:00	585000	5.084487	17.040512	12.53688
5/11/2018 4:15	585900	5.086764	17.02887	12.531689
5/11/2018 4:30	586800	5.086796	16.959015	12.531617
5/11/2018 4:45	587700	5.086173	17.023056	12.533037
5/11/2018 5:00	588600	5.08684	16.999039	12.531517
5/11/2018 5:15	589500	5.08785	17.013596	12.529215
5/11/2018 5:30	590400	5.085076	17.040512	12.535536
5/11/2018 5:45	591300	5.085732	17.02887	12.53404
5/11/2018 6:00	592200	5.086593	17.017227	12.53208
5/11/2018 6:15	593100	5.085139	17.02597	12.535393
5/11/2018 6:30	594000	5.088069	16.999771	12.528715
5/11/2018 6:45	594900	5.084827	17.038315	12.536103
5/11/2018 7:00	595800	5.085566	17.046326	12.534421
5/11/2018 7:15	596700	5.086494	17.043411	12.532304
5/11/2018 7:30	597600	5.086089	17.023056	12.533228
5/11/2018 7:45	598500	5.085355	17.022324	12.534902
5/11/2018 8:00	599400	5.084894	17.013596	12.535952
5/11/2018 8:15	600300	5.087287	17.033966	12.530497
5/11/2018 8:30	601200	5.085252	17.062332	12.535135
5/11/2018 8:45	602100	5.085956	17.057968	12.533532
5/11/2018 9:00	603000	5.084378	17.038315	12.537127
5/11/2018 9:15	603900	5.083436	16.991043	12.539275
5/11/2018 9:30	604800	5.08378	16.996857	12.53849

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/4/2018 9:30	0	5.283568	17.18161	12.083113
5/4/2018 9:45	900	5.280178	17.126343	12.090839
5/4/2018 10:00	1800	5.278263	17.104523	12.095204
5/4/2018 10:15	2700	5.274573	17.11615	12.103615
5/4/2018 10:30	3600	5.270355	17.100143	12.113229
5/4/2018 10:45	4500	5.273652	17.100876	12.105714
5/4/2018 11:00	5400	5.270157	17.112518	12.113681
5/4/2018 11:15	6300	5.268647	17.113953	12.117122
5/4/2018 11:30	7200	5.264151	17.111069	12.12737
5/4/2018 11:45	8100	5.264688	17.054321	12.126144
5/4/2018 12:00	9000	5.260519	17.112518	12.135648
5/4/2018 12:15	9900	5.258149	17.127792	12.14105
5/4/2018 12:30	10800	5.257493	17.111771	12.142546
5/4/2018 12:45	11700	5.258276	17.148865	12.14076
5/4/2018 13:00	12600	5.255038	17.127792	12.148141
5/4/2018 13:15	13500	5.251897	17.1147	12.155301
5/4/2018 13:30	14400	5.25001	17.13652	12.159602
5/4/2018 13:45	15300	5.248459	17.108154	12.163137
5/4/2018 14:00	16200	5.248021	17.126343	12.164135
5/4/2018 14:15	17100	5.247104	17.039063	12.166226
5/4/2018 14:30	18000	5.242823	17.087067	12.175983
5/4/2018 14:45	18900	5.24118	17.095047	12.179728
5/4/2018 15:00	19800	5.243179	17.105972	12.175171
5/4/2018 15:15	20700	5.240727	17.09433	12.180759
5/4/2018 15:30	21600	5.237115	17.125595	12.188993
5/4/2018 15:45	22500	5.236244	17.086319	12.190978
5/4/2018 16:00	23400	5.236069	17.086319	12.191378
5/4/2018 16:15	24300	5.233794	17.13797	12.196564
5/4/2018 16:30	25200	5.233033	17.107422	12.198297
5/4/2018 16:45	26100	5.23112	17.098679	12.202659
5/4/2018 17:00	27000	5.230518	17.089966	12.204029
5/4/2018 17:15	27900	5.231012	17.098679	12.202903
5/4/2018 17:30	28800	5.228504	17.09433	12.208621
5/4/2018 17:45	29700	5.228709	17.081223	12.208153
5/4/2018 18:00	30600	5.227166	17.088501	12.21167
5/4/2018 18:15	31500	5.223179	17.124863	12.220758
5/4/2018 18:30	32400	5.22275	17.09433	12.221736
5/4/2018 18:45	33300	5.222987	17.078323	12.221195
5/4/2018 19:00	34200	5.224237	17.075424	12.218345
5/4/2018 19:15	35100	5.220533	17.06015	12.226788
5/4/2018 19:30	36000	5.221767	17.093597	12.223975
5/4/2018 19:45	36900	5.217905	17.122696	12.232779

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/4/2018 20:00	37800	5.220391	17.127792	12.227112
5/4/2018 20:15	38700	5.21766	17.080521	12.233337
5/4/2018 20:30	39600	5.215174	17.075424	12.239004
5/4/2018 20:45	40500	5.213567	17.058685	12.242667
5/4/2018 21:00	41400	5.213382	17.098679	12.243089
5/4/2018 21:15	42300	5.215407	17.07106	12.238472
5/4/2018 21:30	43200	5.213645	17.020142	12.242488
5/4/2018 21:45	44100	5.213825	17.098679	12.242078
5/4/2018 22:00	45000	5.211942	17.033966	12.246371
5/4/2018 22:15	45900	5.211049	17.080521	12.248406
5/4/2018 22:30	46800	5.209222	17.085602	12.25257
5/4/2018 22:45	47700	5.208255	17.019409	12.254774
5/4/2018 23:00	48600	5.207856	17.041962	12.255683
5/4/2018 23:15	49500	5.206801	17.067413	12.258087
5/4/2018 23:30	50400	5.206492	17.081223	12.258793
5/4/2018 23:45	51300	5.203977	17.084885	12.264525
5/5/2018 0:00	52200	5.204787	17.068146	12.262679
5/5/2018 0:15	53100	5.204067	17.07106	12.264319
5/5/2018 0:30	54000	5.201729	17.135056	12.26965
5/5/2018 0:45	54900	5.203241	17.113953	12.266202
5/5/2018 1:00	55800	5.197877	17.080521	12.278429
5/5/2018 1:15	56700	5.20146	17.073959	12.270262
5/5/2018 1:30	57600	5.200677	17.076141	12.272047
5/5/2018 1:45	58500	5.198144	17.070328	12.277821
5/5/2018 2:00	59400	5.198617	17.044159	12.276743
5/5/2018 2:15	60300	5.19563	17.073959	12.283551
5/5/2018 2:30	61200	5.192634	17.101593	12.29038
5/5/2018 2:45	62100	5.196992	17.089966	12.280446
5/5/2018 3:00	63000	5.194454	17.105225	12.286231
5/5/2018 3:15	63900	5.194844	17.09433	12.285341
5/5/2018 3:30	64800	5.193562	17.11615	12.288264
5/5/2018 3:45	65700	5.191836	17.096497	12.292197
5/5/2018 4:00	66600	5.190333	17.102341	12.295623
5/5/2018 4:15	67500	5.187595	17.064514	12.301864
5/5/2018 4:30	68400	5.187777	17.13797	12.301451
5/5/2018 4:45	69300	5.188708	17.07251	12.299327
5/5/2018 5:00	70200	5.18532	17.067413	12.307051
5/5/2018 5:15	71100	5.185665	17.097977	12.306265
5/5/2018 5:30	72000	5.184583	17.080521	12.308729
5/5/2018 5:45	72900	5.184418	17.123428	12.309106
5/5/2018 6:00	73800	5.183654	17.135056	12.310846
5/5/2018 6:15	74700	5.183773	17.110321	12.310577

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/5/2018 6:30	75600	5.18035	17.073242	12.318377
5/5/2018 6:45	76500	5.181073	17.076874	12.31673
5/5/2018 7:00	77400	5.179265	17.09433	12.320851
5/5/2018 7:15	78300	5.179797	17.095795	12.319638
5/5/2018 7:30	79200	5.177279	17.069595	12.325377
5/5/2018 7:45	80100	5.177429	17.058685	12.325036
5/5/2018 8:00	81000	5.176695	17.055786	12.32671
5/5/2018 8:15	81900	5.175251	17.052872	12.330002
5/5/2018 8:30	82800	5.176789	17.103058	12.326494
5/5/2018 8:45	83700	5.175447	17.070328	12.329555
5/5/2018 9:00	84600	5.175048	17.080521	12.330462
5/5/2018 9:15	85500	5.173277	17.057968	12.3345
5/5/2018 9:30	86400	5.172569	17.080521	12.336113
5/5/2018 9:45	87300	5.173835	17.07106	12.333228
5/5/2018 10:00	88200	5.168888	17.104523	12.344503
5/5/2018 10:15	89100	5.171196	17.119797	12.339244
5/5/2018 10:30	90000	5.16815	17.056503	12.346186
5/5/2018 10:45	90900	5.169376	17.08197	12.34339
5/5/2018 11:00	91800	5.167039	17.085602	12.348719
5/5/2018 11:15	92700	5.165391	17.066696	12.352474
5/5/2018 11:30	93600	5.164669	17.113953	12.35412
5/5/2018 11:45	94500	5.1621	17.099426	12.359975
5/5/2018 12:00	95400	5.163391	17.073242	12.357033
5/5/2018 12:15	96300	5.161611	17.082703	12.361091
5/5/2018 12:30	97200	5.160354	17.080521	12.363956
5/5/2018 12:45	98100	5.159725	16.999771	12.365389
5/5/2018 13:00	99000	5.159022	17.074692	12.36699
5/5/2018 13:15	99900	5.158581	17.087067	12.367997
5/5/2018 13:30	100800	5.156558	17.089966	12.372607
5/5/2018 13:45	101700	5.155905	17.049225	12.374095
5/5/2018 14:00	102600	5.154633	17.073242	12.376996
5/5/2018 14:15	103500	5.154741	17.075424	12.376748
5/5/2018 14:30	104400	5.155183	17.09288	12.375742
5/5/2018 14:45	105300	5.153152	17.1147	12.380372
5/5/2018 15:00	106200	5.152479	17.144516	12.381905
5/5/2018 15:15	107100	5.152879	17.07251	12.380994
5/5/2018 15:30	108000	5.150992	17.117615	12.385293
5/5/2018 15:45	108900	5.150099	17.084885	12.387329
5/5/2018 16:00	109800	5.148651	17.063049	12.39063
5/5/2018 16:15	110700	5.148752	17.076141	12.390399
5/5/2018 16:30	111600	5.146882	17.058685	12.394662
5/5/2018 16:45	112500	5.150047	17.101593	12.387447

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/5/2018 17:00	113400	5.147108	17.065231	12.394148
5/5/2018 17:15	114300	5.147196	17.079056	12.393947
5/5/2018 17:30	115200	5.146607	17.065231	12.395289
5/5/2018 17:45	116100	5.14595	17.065964	12.396786
5/5/2018 18:00	117000	5.145097	17.091415	12.398731
5/5/2018 18:15	117900	5.143504	17.058685	12.402361
5/5/2018 18:30	118800	5.143198	17.085602	12.40306
5/5/2018 18:45	119700	5.143079	17.041962	12.403331
5/5/2018 19:00	120600	5.142897	17.078323	12.403746
5/5/2018 19:15	121500	5.141805	17.065964	12.406235
5/5/2018 19:30	122400	5.141114	17.139435	12.407808
5/5/2018 19:45	123300	5.140015	17.093597	12.410314
5/5/2018 20:00	124200	5.140244	17.081223	12.409793
5/5/2018 20:15	125100	5.139596	17.089966	12.411269
5/5/2018 20:30	126000	5.139485	17.080521	12.411521
5/5/2018 20:45	126900	5.137813	17.052139	12.415334
5/5/2018 21:00	127800	5.138692	17.051407	12.41333
5/5/2018 21:15	128700	5.139771	17.068878	12.41087
5/5/2018 21:30	129600	5.137716	17.068878	12.415553
5/5/2018 21:45	130500	5.135356	17.064514	12.420934
5/5/2018 22:00	131400	5.136625	17.084885	12.41804
5/5/2018 22:15	132300	5.135374	17.096497	12.420892
5/5/2018 22:30	133200	5.135938	17.08197	12.419607
5/5/2018 22:45	134100	5.134552	17.096497	12.422766
5/5/2018 23:00	135000	5.136415	17.065964	12.418521
5/5/2018 23:15	135900	5.132062	17.119797	12.428442
5/5/2018 23:30	136800	5.132232	17.138702	12.428054
5/5/2018 23:45	137700	5.131571	17.065964	12.42956
5/6/2018 0:00	138600	5.133698	17.084152	12.424713
5/6/2018 0:15	139500	5.130713	17.054321	12.431518
5/6/2018 0:30	140400	5.131087	17.044861	12.430663
5/6/2018 0:45	141300	5.129818	17.081223	12.433557
5/6/2018 1:00	142200	5.130369	17.107422	12.432301
5/6/2018 1:15	143100	5.131826	17.054321	12.428978
5/6/2018 1:30	144000	5.130836	17.087067	12.431234
5/6/2018 1:45	144900	5.129639	17.090698	12.433965
5/6/2018 2:00	145800	5.125518	17.097244	12.443357
5/6/2018 2:15	146700	5.128435	17.054321	12.436708
5/6/2018 2:30	147600	5.128642	17.068878	12.436236
5/6/2018 2:45	148500	5.12517	17.08197	12.444151
5/6/2018 3:00	149400	5.127038	17.145233	12.439893
5/6/2018 3:15	150300	5.125592	17.091415	12.443188

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/6/2018 3:30	151200	5.12688	17.089249	12.440253
5/6/2018 3:45	152100	5.128018	17.079056	12.437658
5/6/2018 4:00	153000	5.126369	17.080521	12.441419
5/6/2018 4:15	153900	5.123583	17.036865	12.447768
5/6/2018 4:30	154800	5.124809	17.113953	12.444973
5/6/2018 4:45	155700	5.124673	17.079056	12.445284
5/6/2018 5:00	156600	5.12366	17.067413	12.447593
5/6/2018 5:15	157500	5.121757	17.100143	12.451931
5/6/2018 5:30	158400	5.124277	17.08197	12.446186
5/6/2018 5:45	159300	5.123032	17.049957	12.449023
5/6/2018 6:00	160200	5.12382	17.027405	12.447227
5/6/2018 6:15	161100	5.120852	17.041245	12.453994
5/6/2018 6:30	162000	5.123068	17.051407	12.448942
5/6/2018 6:45	162900	5.124766	17.049957	12.44507
5/6/2018 7:00	163800	5.120964	17.079788	12.453737
5/6/2018 7:15	164700	5.119309	17.071777	12.457508
5/6/2018 7:30	165600	5.122835	17.022324	12.449472
5/6/2018 7:45	166500	5.120604	17.010681	12.454558
5/6/2018 8:00	167400	5.122514	17.046326	12.450205
5/6/2018 8:15	168300	5.122282	17.056503	12.450734
5/6/2018 8:30	169200	5.119771	17.076874	12.456456
5/6/2018 8:45	170100	5.123392	17.096497	12.448203
5/6/2018 9:00	171000	5.121615	17.078323	12.452252
5/6/2018 9:15	171900	5.120652	17.091415	12.454448
5/6/2018 9:30	172800	5.12103	17.073959	12.453588
5/6/2018 9:45	173700	5.120933	17.063049	12.453809
5/6/2018 10:00	174600	5.121432	17.044159	12.452671
5/6/2018 10:15	175500	5.121199	17.069595	12.453202
5/6/2018 10:30	176400	5.119412	17.09288	12.457273
5/6/2018 10:45	177300	5.119553	17.071777	12.456954
5/6/2018 11:00	178200	5.120306	17.113251	12.455237
5/6/2018 11:15	179100	5.121967	17.052872	12.45145
5/6/2018 11:30	180000	5.120572	17.069595	12.454632
5/6/2018 11:45	180900	5.121379	17.078323	12.45279
5/6/2018 12:00	181800	5.119672	17.076874	12.456681
5/6/2018 12:15	182700	5.117496	17.02449	12.461643
5/6/2018 12:30	183600	5.120599	17.088501	12.45457
5/6/2018 12:45	184500	5.120556	17.074692	12.454667
5/6/2018 13:00	185400	5.117899	17.058685	12.460724
5/6/2018 13:15	186300	5.118242	17.048508	12.459941
5/6/2018 13:30	187200	5.117894	17.073242	12.460735
5/6/2018 13:45	188100	5.119759	17.078323	12.456485

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/6/2018 14:00	189000	5.119678	17.023773	12.456667
5/6/2018 14:15	189900	5.11934	17.036865	12.457438
5/6/2018 14:30	190800	5.120897	17.106689	12.453889
5/6/2018 14:45	191700	5.119072	17.093597	12.458049
5/6/2018 15:00	192600	5.119162	17.055054	12.457846
5/6/2018 15:15	193500	5.120508	17.087067	12.454776
5/6/2018 15:30	194400	5.117336	17.065231	12.462006
5/6/2018 15:45	195300	5.119854	17.07106	12.456267
5/6/2018 16:00	196200	5.122357	17.091415	12.450562
5/6/2018 16:15	197100	5.11851	17.041962	12.45933
5/6/2018 16:30	198000	5.117336	17.084885	12.462006
5/6/2018 16:45	198900	5.118402	17.0616	12.459578
5/6/2018 17:00	199800	5.1164	17.07106	12.464141
5/6/2018 17:15	200700	5.118347	17.045593	12.459702
5/6/2018 17:30	201600	5.11837	17.037598	12.45965
5/6/2018 17:45	202500	5.118544	17.091415	12.459254
5/6/2018 18:00	203400	5.118748	17.052872	12.458789
5/6/2018 18:15	204300	5.116051	17.036865	12.464936
5/6/2018 18:30	205200	5.119848	17.048508	12.456282
5/6/2018 18:45	206100	5.118984	17.084152	12.458251
5/6/2018 19:00	207000	5.11862	17.055054	12.45908
5/6/2018 19:15	207900	5.11733	17.074692	12.462021
5/6/2018 19:30	208800	5.119008	17.07106	12.458196
5/6/2018 19:45	209700	5.118367	17.055054	12.459656
5/6/2018 20:00	210600	5.1157	17.069595	12.465736
5/6/2018 20:15	211500	5.117229	17.109604	12.46225
5/6/2018 20:30	212400	5.115745	17.089249	12.465633
5/6/2018 20:45	213300	5.116385	17.073959	12.464175
5/6/2018 21:00	214200	5.117392	17.041245	12.46188
5/6/2018 21:15	215100	5.11498	17.075424	12.467376
5/6/2018 21:30	216000	5.116717	17.060867	12.463418
5/6/2018 21:45	216900	5.114264	17.089249	12.469007
5/6/2018 22:00	217800	5.115604	17.069595	12.465954
5/6/2018 22:15	218700	5.116385	17.067413	12.464175
5/6/2018 22:30	219600	5.11724	17.063049	12.462224
5/6/2018 22:45	220500	5.113018	17.077606	12.471849
5/6/2018 23:00	221400	5.115706	17.101593	12.465722
5/6/2018 23:15	222300	5.116262	17.037598	12.464454
5/6/2018 23:30	223200	5.115975	17.103775	12.465108
5/6/2018 23:45	224100	5.114206	17.073242	12.469141
5/7/2018 0:00	225000	5.113325	17.054321	12.471149
5/7/2018 0:15	225900	5.115667	17.040512	12.46581

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 0:30	226800	5.113841	17.059418	12.469973
5/7/2018 0:45	227700	5.11455	17.036148	12.468357
5/7/2018 1:00	228600	5.11416	17.088501	12.469246
5/7/2018 1:15	229500	5.115294	17.06015	12.466662
5/7/2018 1:30	230400	5.112433	17.073959	12.473182
5/7/2018 1:45	231300	5.112219	17.065964	12.47367
5/7/2018 2:00	232200	5.112777	17.109604	12.472399
5/7/2018 2:15	233100	5.114223	17.103775	12.469103
5/7/2018 2:30	234000	5.113213	17.09288	12.471405
5/7/2018 2:45	234900	5.112569	17.113953	12.472873
5/7/2018 3:00	235800	5.111578	17.076141	12.475131
5/7/2018 3:15	236700	5.110709	17.089966	12.477111
5/7/2018 3:30	237600	5.112842	17.062332	12.472251
5/7/2018 3:45	238500	5.108803	17.056503	12.481455
5/7/2018 4:00	239400	5.11428	17.07251	12.468971
5/7/2018 4:15	240300	5.112747	17.062332	12.472466
5/7/2018 4:30	241200	5.11395	17.100143	12.469725
5/7/2018 4:45	242100	5.109864	17.076141	12.479037
5/7/2018 5:00	243000	5.110348	17.071777	12.477934
5/7/2018 5:15	243900	5.110524	17.108154	12.477532
5/7/2018 5:30	244800	5.110841	17.076874	12.476811
5/7/2018 5:45	245700	5.110081	17.07251	12.478543
5/7/2018 6:00	246600	5.109395	17.065231	12.480106
5/7/2018 6:15	247500	5.11178	17.068878	12.47467
5/7/2018 6:30	248400	5.109248	17.078323	12.480441
5/7/2018 6:45	249300	5.109092	17.068878	12.480797
5/7/2018 7:00	250200	5.108548	17.047775	12.482038
5/7/2018 7:15	251100	5.108006	17.0616	12.483274
5/7/2018 7:30	252000	5.106595	17.087784	12.486488
5/7/2018 7:45	252900	5.109622	17.095047	12.479589
5/7/2018 8:00	253800	5.108333	17.060867	12.482527
5/7/2018 8:15	254700	5.1079	17.089966	12.483514
5/7/2018 8:30	255600	5.108173	17.076141	12.482891
5/7/2018 8:45	256500	5.108215	17.080521	12.482796
5/7/2018 9:00	257400	5.105315	17.041245	12.489406
5/7/2018 9:15	258300	5.108029	17.07251	12.48322
5/7/2018 9:30	259200	5.108029	17.077606	12.48322
5/7/2018 9:45	260100	5.108159	17.068146	12.482924
5/7/2018 10:00	261000	5.106458	17.055054	12.4868
5/7/2018 10:15	261900	5.108772	17.111069	12.481525
5/7/2018 10:30	262800	5.107491	17.042679	12.484446
5/7/2018 10:45	263700	5.10787	17.121246	12.483583

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 11:00	264600	5.105618	17.036865	12.488716
5/7/2018 11:15	265500	5.106474	17.052139	12.486765
5/7/2018 11:30	266400	5.108092	17.064514	12.483077
5/7/2018 11:45	267300	5.106817	17.053604	12.485982
5/7/2018 12:00	268200	5.106853	17.055054	12.485899
5/7/2018 12:15	269100	5.107757	17.080521	12.483841
5/7/2018 12:30	270000	5.107179	17.087067	12.485158
5/7/2018 12:45	270900	5.105507	17.055054	12.488969
5/7/2018 13:00	271800	5.107196	17.01796	12.485119
5/7/2018 13:15	272700	5.104917	17.05069	12.490314
5/7/2018 13:30	273600	5.105979	17.044861	12.487891
5/7/2018 13:45	274500	5.106328	17.045593	12.487096
5/7/2018 14:00	275400	5.104168	17.026688	12.492021
5/7/2018 14:15	276300	5.103851	17.045593	12.492743
5/7/2018 14:30	277200	5.103948	17.057236	12.492523
5/7/2018 14:45	278100	5.1059	17.055786	12.488073
5/7/2018 15:00	279000	5.103844	17.093597	12.49276
5/7/2018 15:15	279900	5.104786	17.037598	12.490612
5/7/2018 15:30	280800	5.105295	17.026688	12.489452
5/7/2018 15:45	281700	5.1027	17.054321	12.495366
5/7/2018 16:00	282600	5.103415	17.020874	12.493735
5/7/2018 16:15	283500	5.103952	17.031784	12.492512
5/7/2018 16:30	284400	5.102567	17.029587	12.49567
5/7/2018 16:45	285300	5.103271	17.065964	12.494065
5/7/2018 17:00	286200	5.102703	17.087067	12.495359
5/7/2018 17:15	287100	5.101848	16.976486	12.49731
5/7/2018 17:30	288000	5.102466	17.055054	12.495901
5/7/2018 17:45	288900	5.104753	17.055054	12.490686
5/7/2018 18:00	289800	5.103292	17.015045	12.494016
5/7/2018 18:15	290700	5.103367	17.066696	12.493847
5/7/2018 18:30	291600	5.104516	17.052872	12.491227
5/7/2018 18:45	292500	5.100695	17.034683	12.499937
5/7/2018 19:00	293400	5.103875	17.02887	12.492688
5/7/2018 19:15	294300	5.103405	17.030334	12.493759
5/7/2018 19:30	295200	5.10298	17.021591	12.494729
5/7/2018 19:45	296100	5.100217	17.043411	12.501025
5/7/2018 20:00	297000	5.100499	17.078323	12.500382
5/7/2018 20:15	297900	5.10109	17.017227	12.499036
5/7/2018 20:30	298800	5.100082	17.060867	12.501333
5/7/2018 20:45	299700	5.09971	17.017227	12.502183
5/7/2018 21:00	300600	5.102592	17.066696	12.495611
5/7/2018 21:15	301500	5.09953	17.037598	12.502591

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/7/2018 21:30	302400	5.099259	17.084152	12.50321
5/7/2018 21:45	303300	5.102297	17.042679	12.496285
5/7/2018 22:00	304200	5.099847	17.066696	12.50187
5/7/2018 22:15	305100	5.100636	17.063049	12.50007
5/7/2018 22:30	306000	5.101242	17.108871	12.49869
5/7/2018 22:45	306900	5.097092	17.065231	12.508148
5/7/2018 23:00	307800	5.099756	17.041962	12.502076
5/7/2018 23:15	308700	5.100018	17.044159	12.50148
5/7/2018 23:30	309600	5.100844	17.076141	12.499596
5/7/2018 23:45	310500	5.096971	17.089249	12.508426
5/8/2018 0:00	311400	5.097836	17.077606	12.506452
5/8/2018 0:15	312300	5.098484	17.01796	12.504976
5/8/2018 0:30	313200	5.09928	17.062332	12.50316
5/8/2018 0:45	314100	5.09928	16.993942	12.50316
5/8/2018 1:00	315000	5.098464	17.049225	12.505022
5/8/2018 1:15	315900	5.100282	17.01651	12.500877
5/8/2018 1:30	316800	5.096963	17.034683	12.508443
5/8/2018 1:45	317700	5.098453	17.032501	12.505047
5/8/2018 2:00	318600	5.096863	17.049957	12.508671
5/8/2018 2:15	319500	5.097067	17.071777	12.508206
5/8/2018 2:30	320400	5.09655	17.011414	12.509383
5/8/2018 2:45	321300	5.095715	17.003403	12.511289
5/8/2018 3:00	322200	5.096586	17.051407	12.509302
5/8/2018 3:15	323100	5.097978	17.057968	12.50613
5/8/2018 3:30	324000	5.095976	17.048508	12.510692
5/8/2018 3:45	324900	5.096268	17.064514	12.510028
5/8/2018 4:00	325800	5.095394	16.979401	12.512019
5/8/2018 4:15	326700	5.09457	17.011414	12.513898
5/8/2018 4:30	327600	5.096684	17.033966	12.50908
5/8/2018 4:45	328500	5.094748	17.00705	12.513493
5/8/2018 5:00	329400	5.097634	17.020874	12.506913
5/8/2018 5:15	330300	5.092824	17.065964	12.517878
5/8/2018 5:30	331200	5.096179	17.073959	12.51023
5/8/2018 5:45	332100	5.093955	17.053604	12.515299
5/8/2018 6:00	333000	5.094893	17.00705	12.51316
5/8/2018 6:15	333900	5.094409	17.01651	12.514264
5/8/2018 6:30	334800	5.095136	17.041962	12.512607
5/8/2018 6:45	335700	5.095377	17.035416	12.512058
5/8/2018 7:00	336600	5.092865	17.065964	12.517783
5/8/2018 7:15	337500	5.093066	17.042679	12.517324
5/8/2018 7:30	338400	5.093925	17.041962	12.515368
5/8/2018 7:45	339300	5.093065	17.057236	12.517327

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/8/2018 8:00	340200	5.090812	16.996124	12.522463
5/8/2018 8:15	341100	5.091687	17.02887	12.520468
5/8/2018 8:30	342000	5.091653	17.02887	12.520546
5/8/2018 8:45	342900	5.092971	17.063782	12.517542
5/8/2018 9:00	343800	5.090749	17.023056	12.522607
5/8/2018 9:15	344700	5.091582	17.065964	12.520707
5/8/2018 9:30	345600	5.090865	17.06015	12.522342
5/8/2018 9:45	346500	5.091437	17.058685	12.521037
5/8/2018 10:00	347400	5.092519	17.073959	12.518572
5/8/2018 10:15	348300	5.090518	17.062332	12.523132
5/8/2018 10:30	349200	5.089839	17.032501	12.524679
5/8/2018 10:45	350100	5.091135	17.047775	12.521727
5/8/2018 11:00	351000	5.089919	17.076141	12.524498
5/8/2018 11:15	351900	5.089287	17.065231	12.525939
5/8/2018 11:30	352800	5.089138	17.041245	12.526279
5/8/2018 11:45	353700	5.088532	17.045593	12.527658
5/8/2018 12:00	354600	5.090088	17.011414	12.524114
5/8/2018 12:15	355500	5.089823	17.07106	12.524717
5/8/2018 12:30	356400	5.087503	17.045593	12.530005
5/8/2018 12:45	357300	5.090457	17.020874	12.523273
5/8/2018 13:00	358200	5.089122	17.013596	12.526316
5/8/2018 13:15	359100	5.090482	17.063782	12.523214
5/8/2018 13:30	360000	5.090612	16.984482	12.522918
5/8/2018 13:45	360900	5.089334	17.035416	12.525833
5/8/2018 14:00	361800	5.089293	17.02887	12.525927
5/8/2018 14:15	362700	5.089612	17.057236	12.525198
5/8/2018 14:30	363600	5.091455	17.051407	12.520997
5/8/2018 14:45	364500	5.087983	17.084885	12.528911
5/8/2018 15:00	365400	5.088832	17.079056	12.526975
5/8/2018 15:15	366300	5.08964	17.059418	12.525135
5/8/2018 15:30	367200	5.089334	17.048508	12.525833
5/8/2018 15:45	368100	5.089543	17.047775	12.525355
5/8/2018 16:00	369000	5.090933	17.0616	12.522187
5/8/2018 16:15	369900	5.088399	17.002686	12.527963
5/8/2018 16:30	370800	5.087159	17.079788	12.53079
5/8/2018 16:45	371700	5.087568	17.030334	12.529857
5/8/2018 17:00	372600	5.088515	17.033234	12.527698
5/8/2018 17:15	373500	5.088151	17.057968	12.528528
5/8/2018 17:30	374400	5.087848	17.044861	12.52922
5/8/2018 17:45	375300	5.090845	17.046326	12.522388
5/8/2018 18:00	376200	5.088605	17.041245	12.527493
5/8/2018 18:15	377100	5.090898	17.052139	12.522268

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/8/2018 18:30	378000	5.085803	17.052139	12.53388
5/8/2018 18:45	378900	5.08975	17.038315	12.524883
5/8/2018 19:00	379800	5.091127	17.007767	12.521744
5/8/2018 19:15	380700	5.088707	17.059418	12.52726
5/8/2018 19:30	381600	5.091511	17.065231	12.520869
5/8/2018 19:45	382500	5.086429	17.031784	12.532453
5/8/2018 20:00	383400	5.089276	17.013596	12.525965
5/8/2018 20:15	384300	5.088234	17.028152	12.528337
5/8/2018 20:30	385200	5.08839	17.029587	12.527983
5/8/2018 20:45	386100	5.087808	17.071777	12.52931
5/8/2018 21:00	387000	5.090573	17.015778	12.523007
5/8/2018 21:15	387900	5.088986	17.001221	12.526624
5/8/2018 21:30	388800	5.090079	17.033966	12.524133
5/8/2018 21:45	389700	5.088649	17.057968	12.527393
5/8/2018 22:00	390600	5.088594	17.003403	12.527517
5/8/2018 22:15	391500	5.088433	17.038315	12.527884
5/8/2018 22:30	392400	5.088181	17.025238	12.52846
5/8/2018 22:45	393300	5.086874	17.041962	12.531439
5/8/2018 23:00	394200	5.08975	17.092148	12.524883
5/8/2018 23:15	395100	5.08568	17.034683	12.534161
5/8/2018 23:30	396000	5.087632	17.047043	12.529711
5/8/2018 23:45	396900	5.088858	17.02597	12.526917
5/9/2018 0:00	397800	5.086713	17.031052	12.531806
5/9/2018 0:15	398700	5.089164	17.069595	12.526219
5/9/2018 0:30	399600	5.089713	17.041245	12.524967
5/9/2018 0:45	400500	5.088015	17.06015	12.528839
5/9/2018 1:00	401400	5.087529	17.032501	12.529945
5/9/2018 1:15	402300	5.085913	17.034683	12.533629
5/9/2018 1:30	403200	5.087155	17.059418	12.530799
5/9/2018 1:45	404100	5.087778	17.026688	12.529379
5/9/2018 2:00	405000	5.087254	17.037598	12.530574
5/9/2018 2:15	405900	5.085537	17.079788	12.534487
5/9/2018 2:30	406800	5.086322	17.028152	12.532696
5/9/2018 2:45	407700	5.086473	17.049225	12.532351
5/9/2018 3:00	408600	5.086549	16.995407	12.53218
5/9/2018 3:15	409500	5.084337	17.005585	12.537221
5/9/2018 3:30	410400	5.084873	17.057968	12.535999
5/9/2018 3:45	411300	5.085074	17.02449	12.535541
5/9/2018 4:00	412200	5.088116	17.056503	12.528607
5/9/2018 4:15	413100	5.084666	17.042679	12.536472
5/9/2018 4:30	414000	5.088953	17.065964	12.5267
5/9/2018 4:45	414900	5.086807	17.003403	12.531591

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/9/2018 5:00	415800	5.086883	17.010681	12.531419
5/9/2018 5:15	416700	5.083076	17.048508	12.540096
5/9/2018 5:30	417600	5.085842	17.039063	12.533792
5/9/2018 5:45	418500	5.086014	17.029587	12.5334
5/9/2018 6:00	419400	5.085567	17.055786	12.534417
5/9/2018 6:15	420300	5.085044	17.02887	12.53561
5/9/2018 6:30	421200	5.084827	17.048508	12.536103
5/9/2018 6:45	422100	5.08321	17.084885	12.539791
5/9/2018 7:00	423000	5.086776	17.017227	12.531663
5/9/2018 7:15	423900	5.084169	17.008499	12.537603
5/9/2018 7:30	424800	5.084894	17.043411	12.535952
5/9/2018 7:45	425700	5.084797	17.001221	12.536173
5/9/2018 8:00	426600	5.086357	17.084152	12.532617
5/9/2018 8:15	427500	5.086155	17.0616	12.533078
5/9/2018 8:30	428400	5.085977	17.047043	12.533484
5/9/2018 8:45	429300	5.084315	17.014328	12.537271
5/9/2018 9:00	430200	5.084981	17.07251	12.535753
5/9/2018 9:15	431100	5.084179	17.011414	12.537581
5/9/2018 9:30	432000	5.084956	17.001953	12.53581
5/9/2018 9:45	432900	5.086216	17.012146	12.532939
5/9/2018 10:00	433800	5.084387	17.036865	12.537107
5/9/2018 10:15	434700	5.086218	17.054321	12.532934
5/9/2018 10:30	435600	5.084519	17.014328	12.536806
5/9/2018 10:45	436500	5.085203	17.008499	12.535247
5/9/2018 11:00	437400	5.084873	17.049225	12.535999
5/9/2018 11:15	438300	5.085323	16.988129	12.534973
5/9/2018 11:30	439200	5.084827	17.011414	12.536103
5/9/2018 11:45	440100	5.085116	17.055786	12.535445
5/9/2018 12:00	441000	5.082656	17.037598	12.541053
5/9/2018 12:15	441900	5.082994	17.046326	12.540283
5/9/2018 12:30	442800	5.083928	17.036148	12.538154
5/9/2018 12:45	443700	5.084731	17.022324	12.536324
5/9/2018 13:00	444600	5.085501	17.054321	12.534569
5/9/2018 13:15	445500	5.08366	17.036865	12.538764
5/9/2018 13:30	446400	5.083357	17.047775	12.539455
5/9/2018 13:45	447300	5.083138	17.040512	12.539955
5/9/2018 14:00	448200	5.085455	17.059418	12.534674
5/9/2018 14:15	449100	5.084633	17.045593	12.536547
5/9/2018 14:30	450000	5.085289	17.035416	12.535051
5/9/2018 14:45	450900	5.084571	17.05069	12.536688
5/9/2018 15:00	451800	5.082967	17.055786	12.540344
5/9/2018 15:15	452700	5.082346	17.076874	12.541759

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/9/2018 15:30	453600	5.082492	17.065231	12.541427
5/9/2018 15:45	454500	5.084219	17.039063	12.537489
5/9/2018 16:00	455400	5.083984	17.078323	12.538026
5/9/2018 16:15	456300	5.085598	17.015045	12.534348
5/9/2018 16:30	457200	5.083105	17.045593	12.54003
5/9/2018 16:45	458100	5.085142	17.041245	12.535387
5/9/2018 17:00	459000	5.085557	17.015778	12.53444
5/9/2018 17:15	459900	5.082626	17.032501	12.541121
5/9/2018 17:30	460800	5.083171	17.01651	12.539878
5/9/2018 17:45	461700	5.084914	17.022324	12.535906
5/9/2018 18:00	462600	5.085835	17.092148	12.533808
5/9/2018 18:15	463500	5.086946	17.03978	12.531274
5/9/2018 18:30	464400	5.085842	17.045593	12.533792
5/9/2018 18:45	465300	5.085621	17.031052	12.534294
5/9/2018 19:00	466200	5.082554	17.023773	12.541286
5/9/2018 19:15	467100	5.084001	17.005585	12.537988
5/9/2018 19:30	468000	5.084311	17.01796	12.537282
5/9/2018 19:45	468900	5.08411	17.052872	12.537738
5/9/2018 20:00	469800	5.08497	17.053604	12.535777
5/9/2018 20:15	470700	5.085423	17.056503	12.534747
5/9/2018 20:30	471600	5.083735	17.049225	12.538594
5/9/2018 20:45	472500	5.084617	17.055054	12.536584
5/9/2018 21:00	473400	5.084521	17.064514	12.536801
5/9/2018 21:15	474300	5.086648	17.032501	12.531955
5/9/2018 21:30	475200	5.084211	16.999039	12.537508
5/9/2018 21:45	476100	5.084634	17.006317	12.536544
5/9/2018 22:00	477000	5.086494	17.030334	12.532304
5/9/2018 22:15	477900	5.08501	17.031784	12.535688
5/9/2018 22:30	478800	5.084175	17.049957	12.53759
5/9/2018 22:45	479700	5.085348	17.019409	12.534918
5/9/2018 23:00	480600	5.085074	17.019409	12.535541
5/9/2018 23:15	481500	5.084593	17.039063	12.536638
5/9/2018 23:30	482400	5.081275	17.027405	12.544202
5/9/2018 23:45	483300	5.084554	17.002686	12.536728
5/10/2018 0:00	484200	5.087808	16.998322	12.52931
5/10/2018 0:15	485100	5.084175	17.021591	12.53759
5/10/2018 0:30	486000	5.086604	17.044159	12.532054
5/10/2018 0:45	486900	5.084802	17.046326	12.536162
5/10/2018 1:00	487800	5.08552	17.019409	12.534526
5/10/2018 1:15	488700	5.083895	17.01796	12.538228
5/10/2018 1:30	489600	5.08552	17.038315	12.534526
5/10/2018 1:45	490500	5.084294	17.028152	12.537318

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/10/2018 2:00	491400	5.085181	17.001221	12.535297
5/10/2018 2:15	492300	5.085803	17.019409	12.53388
5/10/2018 2:30	493200	5.085605	17.047043	12.534332
5/10/2018 2:45	494100	5.08642	17.0616	12.532475
5/10/2018 3:00	495000	5.082903	17.073242	12.54049
5/10/2018 3:15	495900	5.084465	17.037598	12.536929
5/10/2018 3:30	496800	5.08501	17.030334	12.535688
5/10/2018 3:45	497700	5.086614	17.082703	12.532032
5/10/2018 4:00	498600	5.084802	16.988861	12.536161
5/10/2018 4:15	499500	5.085102	17.033966	12.535479
5/10/2018 4:30	500400	5.083589	16.983765	12.538927
5/10/2018 4:45	501300	5.083519	17.00705	12.539086
5/10/2018 5:00	502200	5.084617	17.018692	12.536584
5/10/2018 5:15	503100	5.084146	17.032501	12.537656
5/10/2018 5:30	504000	5.087155	17.001221	12.530799
5/10/2018 5:45	504900	5.083606	17.063782	12.538887
5/10/2018 6:00	505800	5.084046	17.009949	12.537884
5/10/2018 6:15	506700	5.084634	17.025238	12.536544
5/10/2018 6:30	507600	5.083767	17.025238	12.538521
5/10/2018 6:45	508500	5.08552	17.03978	12.534526
5/10/2018 7:00	509400	5.085649	16.99176	12.534232
5/10/2018 7:15	510300	5.08453	17.022324	12.536781
5/10/2018 7:30	511200	5.08368	17.00705	12.538718
5/10/2018 7:45	512100	5.08642	17.020874	12.532475
5/10/2018 8:00	513000	5.085454	16.987396	12.534677
5/10/2018 8:15	513900	5.084019	17.02597	12.537947
5/10/2018 8:30	514800	5.084731	17.035416	12.536324
5/10/2018 8:45	515700	5.0859	17.007767	12.533658
5/10/2018 9:00	516600	5.085181	17.000504	12.535297
5/10/2018 9:15	517500	5.084348	16.96994	12.537197
5/10/2018 9:30	518400	5.084723	16.999771	12.536341
5/10/2018 9:45	519300	5.085067	17.008499	12.535558
5/10/2018 10:00	520200	5.084489	17.012863	12.536876
5/10/2018 10:15	521100	5.084867	17.032501	12.536014
5/10/2018 10:30	522000	5.083831	17.023056	12.538375
5/10/2018 10:45	522900	5.082885	16.988861	12.540531
5/10/2018 11:00	523800	5.085913	17.065231	12.533629
5/10/2018 11:15	524700	5.083584	17.030334	12.538939
5/10/2018 11:30	525600	5.085762	17.019409	12.533974
5/10/2018 11:45	526500	5.085798	16.990311	12.533891
5/10/2018 12:00	527400	5.084636	17.015778	12.536541
5/10/2018 12:15	528300	5.083138	16.977936	12.539955

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/10/2018 12:30	529200	5.085792	17.018692	12.533905
5/10/2018 12:45	530100	5.085454	17.01651	12.534677
5/10/2018 13:00	531000	5.086818	17.052872	12.531567
5/10/2018 13:15	531900	5.084593	17.044159	12.536638
5/10/2018 13:30	532800	5.085672	17.070328	12.534179
5/10/2018 13:45	533700	5.085946	17.08197	12.533554
5/10/2018 14:00	534600	5.086525	16.972122	12.532233
5/10/2018 14:15	535500	5.084517	17.00705	12.53681
5/10/2018 14:30	536400	5.085549	17.02449	12.534458
5/10/2018 14:45	537300	5.085044	17.051407	12.53561
5/10/2018 15:00	538200	5.085835	17.045593	12.533808
5/10/2018 15:15	539100	5.084776	17.031784	12.536221
5/10/2018 15:30	540000	5.08546	17.078323	12.534662
5/10/2018 15:45	540900	5.084139	17.032501	12.537673
5/10/2018 16:00	541800	5.08778	17.086319	12.529374
5/10/2018 16:15	542700	5.085187	17.06015	12.535284
5/10/2018 16:30	543600	5.087435	17.032501	12.530161
5/10/2018 16:45	544500	5.086827	16.972839	12.531546
5/10/2018 17:00	545400	5.084169	17.02449	12.537603
5/10/2018 17:15	546300	5.087221	17.00705	12.530647
5/10/2018 17:30	547200	5.085493	17.031784	12.534588
5/10/2018 17:45	548100	5.087234	17.006317	12.53062
5/10/2018 18:00	549000	5.087621	17.068146	12.529737
5/10/2018 18:15	549900	5.086809	17.009232	12.531587
5/10/2018 18:30	550800	5.08806	17.015778	12.528736
5/10/2018 18:45	551700	5.086942	17.02449	12.531284
5/10/2018 19:00	552600	5.086874	16.972122	12.531439
5/10/2018 19:15	553500	5.087081	17.020142	12.530967
5/10/2018 19:30	554400	5.087769	17.031052	12.529399
5/10/2018 19:45	555300	5.08696	16.989578	12.531243
5/10/2018 20:00	556200	5.086699	16.998322	12.531838
5/10/2018 20:15	557100	5.087962	16.987396	12.528958
5/10/2018 20:30	558000	5.086087	17.009232	12.533232
5/10/2018 20:45	558900	5.086872	17.001221	12.531445
5/10/2018 21:00	559800	5.090435	17.017227	12.523322
5/10/2018 21:15	560700	5.088591	17.042679	12.527525
5/10/2018 21:30	561600	5.088671	17.053604	12.527343
5/10/2018 21:45	562500	5.087674	17.055054	12.529616
5/10/2018 22:00	563400	5.088359	17.044159	12.528054
5/10/2018 22:15	564300	5.089653	17.012863	12.525105
5/10/2018 22:30	565200	5.084627	17.025238	12.53656
5/10/2018 22:45	566100	5.086356	17.010681	12.532619

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/10/2018 23:00	567000	5.08856	17.004868	12.527596
5/10/2018 23:15	567900	5.088617	17.057968	12.527467
5/10/2018 23:30	568800	5.090102	17.020874	12.52408
5/10/2018 23:45	569700	5.088245	16.964844	12.528313
5/11/2018 0:00	570600	5.08801	17.001953	12.52885
5/11/2018 0:15	571500	5.088528	17.01651	12.52767
5/11/2018 0:30	572400	5.088277	17.038315	12.528241
5/11/2018 0:45	573300	5.08606	17.02887	12.533295
5/11/2018 1:00	574200	5.088875	16.998322	12.526878
5/11/2018 1:15	575100	5.089725	17.030334	12.524941
5/11/2018 1:30	576000	5.089903	17.005585	12.524535
5/11/2018 1:45	576900	5.08813	17.021591	12.528577
5/11/2018 2:00	577800	5.08577	16.988861	12.533956
5/11/2018 2:15	578700	5.085926	17.019409	12.5336
5/11/2018 2:30	579600	5.087826	17.005585	12.529269
5/11/2018 2:45	580500	5.086969	17.014328	12.531222
5/11/2018 3:00	581400	5.087901	17.007767	12.529098
5/11/2018 3:15	582300	5.087826	17.043411	12.529269
5/11/2018 3:30	583200	5.086614	17.02449	12.532032
5/11/2018 3:45	584100	5.087144	17.019409	12.530824
5/11/2018 4:00	585000	5.084487	17.040512	12.53688
5/11/2018 4:15	585900	5.086764	17.02887	12.531689
5/11/2018 4:30	586800	5.086796	16.959015	12.531617
5/11/2018 4:45	587700	5.086173	17.023056	12.533037
5/11/2018 5:00	588600	5.08684	16.999039	12.531517
5/11/2018 5:15	589500	5.08785	17.013596	12.529215
5/11/2018 5:30	590400	5.085076	17.040512	12.535536
5/11/2018 5:45	591300	5.085732	17.02887	12.53404
5/11/2018 6:00	592200	5.086593	17.017227	12.53208
5/11/2018 6:15	593100	5.085139	17.02597	12.535393
5/11/2018 6:30	594000	5.088069	16.999771	12.528715
5/11/2018 6:45	594900	5.084827	17.038315	12.536103
5/11/2018 7:00	595800	5.085566	17.046326	12.534421
5/11/2018 7:15	596700	5.086494	17.043411	12.532304
5/11/2018 7:30	597600	5.086089	17.023056	12.533228
5/11/2018 7:45	598500	5.085355	17.022324	12.534902
5/11/2018 8:00	599400	5.084894	17.013596	12.535952
5/11/2018 8:15	600300	5.087287	17.033966	12.530497
5/11/2018 8:30	601200	5.085252	17.062332	12.535135
5/11/2018 8:45	602100	5.085956	17.057968	12.533532
5/11/2018 9:00	603000	5.084378	17.038315	12.537127
5/11/2018 9:15	603900	5.083436	16.991043	12.539275

MW-34				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 457203 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 457203 Temperature (C)	Sensor: Pres(G) 69ft SN#: 457203 Level Depth To Water (ft)
5/11/2018 9:30	604800	5.08378	16.996857	12.53849
5/11/2018 9:45	605700	5.086185	17.046326	12.53301

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/11/2018 10:15	0	5.604912	15.989212	9.450317
5/11/2018 10:30	900	5.596876	15.836197	9.468633
5/11/2018 10:45	1800	5.588228	15.78978	9.488345
5/11/2018 11:00	2700	5.579917	15.78833	9.507288
5/11/2018 11:15	3600	5.577086	15.752777	9.513741
5/11/2018 11:30	4500	5.571008	15.797745	9.527595
5/11/2018 11:45	5400	5.568678	15.817337	9.532906
5/11/2018 12:00	6300	5.572311	15.79631	9.524624
5/11/2018 12:15	7200	5.577358	15.798477	9.513122
5/11/2018 12:30	8100	5.580554	15.775986	9.505836
5/11/2018 12:45	9000	5.590924	15.813705	9.482201
5/11/2018 13:00	9900	5.598692	15.740433	9.464493
5/11/2018 13:15	10800	5.610847	15.817337	9.436788
5/11/2018 13:30	11700	5.626132	15.759308	9.40195
5/11/2018 13:45	12600	5.633556	15.782516	9.385027
5/11/2018 14:00	13500	5.64714	15.78978	9.354066
5/11/2018 14:15	14400	5.651894	15.757126	9.34323
5/11/2018 14:30	15300	5.664321	15.775986	9.314905
5/11/2018 14:45	16200	5.67363	15.782516	9.293687
5/11/2018 15:00	17100	5.678659	15.791229	9.282224
5/11/2018 15:15	18000	5.688479	15.768738	9.259841
5/11/2018 15:30	18900	5.691298	15.74118	9.253416
5/11/2018 15:45	19800	5.696645	15.768021	9.241228
5/11/2018 16:00	20700	5.697726	15.732468	9.238766
5/11/2018 16:15	21600	5.703305	15.777435	9.226049
5/11/2018 16:30	22500	5.703308	15.765839	9.226042
5/11/2018 16:45	23400	5.700272	15.763641	9.232963
5/11/2018 17:00	24300	5.695213	15.767288	9.244493
5/11/2018 17:15	25200	5.688635	15.806442	9.259486
5/11/2018 17:30	26100	5.689889	15.801376	9.256628
5/11/2018 17:45	27000	5.677376	15.786133	9.28515
5/11/2018 18:00	27900	5.672374	15.798477	9.29655
5/11/2018 18:15	28800	5.661374	15.768021	9.321622
5/11/2018 18:30	29700	5.649514	15.727386	9.348655
5/11/2018 18:45	30600	5.635287	15.749146	9.381083
5/11/2018 19:00	31500	5.622747	15.809357	9.409664
5/11/2018 19:15	32400	5.611624	15.831116	9.435018
5/11/2018 19:30	33300	5.595615	15.828934	9.471506
5/11/2018 19:45	34200	5.579443	15.819519	9.508368
5/11/2018 20:00	35100	5.563758	15.744064	9.544119
5/11/2018 20:15	36000	5.546373	15.757126	9.583744
5/11/2018 20:30	36900	5.537061	15.733917	9.604971

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/11/2018 20:45	37800	5.524289	15.771637	9.634081
5/11/2018 21:00	38700	5.520245	15.766556	9.6433
5/11/2018 21:15	39600	5.512322	15.773819	9.661358
5/11/2018 21:30	40500	5.506593	15.780334	9.674417
5/11/2018 21:45	41400	5.500749	15.728821	9.687737
5/11/2018 22:00	42300	5.498342	15.780334	9.693223
5/11/2018 22:15	43200	5.49668	15.776718	9.697011
5/11/2018 22:30	44100	5.48991	15.738266	9.712441
5/11/2018 22:45	45000	5.491127	15.774536	9.709668
5/11/2018 23:00	45900	5.492172	15.74118	9.707286
5/11/2018 23:15	46800	5.496285	15.730286	9.69791
5/11/2018 23:30	47700	5.498791	15.774536	9.6922
5/11/2018 23:45	48600	5.509099	15.736084	9.668703
5/12/2018 0:00	49500	5.524065	15.715775	9.634591
5/12/2018 0:15	50400	5.532683	15.739716	9.614949
5/12/2018 0:30	51300	5.55293	15.723022	9.5688
5/12/2018 0:45	52200	5.570026	15.766556	9.529833
5/12/2018 1:00	53100	5.592467	15.759308	9.478683
5/12/2018 1:15	54000	5.624647	15.808624	9.405334
5/12/2018 1:30	54900	5.64496	15.794128	9.359035
5/12/2018 1:45	55800	5.673532	15.807175	9.293909
5/12/2018 2:00	56700	5.700007	15.825317	9.233565
5/12/2018 2:15	57600	5.722133	15.780334	9.183133
5/12/2018 2:30	58500	5.739655	15.844177	9.143195
5/12/2018 2:45	59400	5.759961	15.79921	9.096912
5/12/2018 3:00	60300	5.774134	15.74118	9.064609
5/12/2018 3:15	61200	5.790722	15.779617	9.026798
5/12/2018 3:30	62100	5.805985	15.773087	8.992008
5/12/2018 3:45	63000	5.819239	15.799927	8.961801
5/12/2018 4:00	63900	5.832016	15.826767	8.932676
5/12/2018 4:15	64800	5.845804	15.799927	8.901249
5/12/2018 4:30	65700	5.858938	15.799927	8.871313
5/12/2018 4:45	66600	5.873051	15.792679	8.839146
5/12/2018 5:00	67500	5.885297	15.762939	8.811233
5/12/2018 5:15	68400	5.902184	15.754944	8.772742
5/12/2018 5:30	69300	5.910266	15.823135	8.75432
5/12/2018 5:45	70200	5.921464	15.823868	8.728797
5/12/2018 6:00	71100	5.922467	15.786865	8.72651
5/12/2018 6:15	72000	5.91536	15.741882	8.742709
5/12/2018 6:30	72900	5.900195	15.717957	8.777275
5/12/2018 6:45	73800	5.884364	15.744064	8.81336
5/12/2018 7:00	74700	5.866552	15.737534	8.853959

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/12/2018 7:15	75600	5.848026	15.760757	8.896184
5/12/2018 7:30	76500	5.828081	15.757843	8.941647
5/12/2018 7:45	77400	5.816419	15.785416	8.968227
5/12/2018 8:00	78300	5.803721	15.755676	8.997169
5/12/2018 8:15	79200	5.789614	15.794846	9.029325
5/12/2018 8:30	80100	5.782405	15.732468	9.045755
5/12/2018 8:45	81000	5.770391	15.76149	9.073138
5/12/2018 9:00	81900	5.752647	15.752045	9.113583
5/12/2018 9:15	82800	5.741057	15.749146	9.139999
5/12/2018 9:30	83700	5.726649	15.727386	9.17284
5/12/2018 9:45	84600	5.712337	15.774536	9.205462
5/12/2018 10:00	85500	5.687479	15.729553	9.262122
5/12/2018 10:15	86400	5.678107	15.718689	9.283484
5/12/2018 10:30	87300	5.657043	15.719406	9.331493
5/12/2018 10:45	88200	5.649327	15.742615	9.349081
5/12/2018 11:00	89100	5.642457	15.758575	9.364741
5/12/2018 11:15	90000	5.632819	15.793396	9.386709
5/12/2018 11:30	90900	5.632872	15.765106	9.386588
5/12/2018 11:45	91800	5.628833	15.742615	9.395793
5/12/2018 12:00	92700	5.62544	15.750595	9.403527
5/12/2018 12:15	93600	5.625	15.731003	9.404531
5/12/2018 12:30	94500	5.625477	15.775986	9.403442
5/12/2018 12:45	95400	5.629373	15.790512	9.394564
5/12/2018 13:00	96300	5.635985	15.778152	9.379491
5/12/2018 13:15	97200	5.642724	15.783249	9.364131
5/12/2018 13:30	98100	5.653514	15.747711	9.339538
5/12/2018 13:45	99000	5.663663	15.723022	9.316405
5/12/2018 14:00	99900	5.671778	15.750595	9.297909
5/12/2018 14:15	100800	5.68505	15.740433	9.267656
5/12/2018 14:30	101700	5.699293	15.802109	9.235194
5/12/2018 14:45	102600	5.709339	15.782516	9.212295
5/12/2018 15:00	103500	5.721369	15.760025	9.184875
5/12/2018 15:15	104400	5.738072	15.739716	9.146803
5/12/2018 15:30	105300	5.744141	15.748428	9.132972
5/12/2018 15:45	106200	5.753786	15.760025	9.110988
5/12/2018 16:00	107100	5.771327	15.71431	9.071005
5/12/2018 16:15	108000	5.774392	15.723022	9.06402
5/12/2018 16:30	108900	5.781152	15.773819	9.048612
5/12/2018 16:45	109800	5.785321	15.756409	9.039108
5/12/2018 17:00	110700	5.793712	15.774536	9.019984
5/12/2018 17:15	111600	5.791736	15.756409	9.024488
5/12/2018 17:30	112500	5.79128	15.755676	9.025526

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/12/2018 17:45	113400	5.789596	15.789047	9.029366
5/12/2018 18:00	114300	5.781522	15.768738	9.047768
5/12/2018 18:15	115200	5.773223	15.804276	9.066683
5/12/2018 18:30	116100	5.760875	15.748428	9.094829
5/12/2018 18:45	117000	5.752136	15.735352	9.114747
5/12/2018 19:00	117900	5.742916	15.723755	9.135764
5/12/2018 19:15	118800	5.732948	15.697647	9.158484
5/12/2018 19:30	119700	5.717723	15.723022	9.193185
5/12/2018 19:45	120600	5.709277	15.757843	9.212437
5/12/2018 20:00	121500	5.690743	15.734634	9.254681
5/12/2018 20:15	122400	6.347824	21.286255	7.756992
5/12/2018 20:30	123300	5.867064	20.132248	8.852792
5/12/2018 20:45	124200	5.88265	18.922516	8.817266
5/12/2018 21:00	125100	5.669978	18.206543	9.302012
5/12/2018 21:15	126000	5.660747	17.692093	9.323051
5/12/2018 21:30	126900	5.671546	17.373215	9.298437
5/12/2018 21:45	127800	5.652238	17.04039	9.342445
5/12/2018 22:00	128700	5.610109	16.831192	9.438472
5/12/2018 22:15	129600	5.622787	16.701569	9.409573
5/12/2018 22:30	130500	5.588913	16.559616	9.486782
5/12/2018 22:45	131400	5.579877	16.431381	9.507379
5/12/2018 23:00	132300	5.553765	16.303116	9.566895
5/12/2018 23:15	133200	5.525794	16.279938	9.630652
5/12/2018 23:30	134100	5.509023	16.238617	9.668878
5/12/2018 23:45	135000	5.467304	16.163239	9.763968
5/13/2018 0:00	135900	5.482617	16.167587	9.729064
5/13/2018 0:15	136800	5.472226	16.158157	9.752748
5/13/2018 0:30	137700	5.500278	16.146561	9.688808
5/13/2018 0:45	138600	5.510195	16.162521	9.666206
5/13/2018 1:00	139500	5.541763	16.116837	9.594254
5/13/2018 1:15	140400	5.573404	16.089279	9.522134
5/13/2018 1:30	141300	5.589344	16.064636	9.485802
5/13/2018 1:45	142200	5.600864	16.045059	9.459542
5/13/2018 2:00	143100	5.616369	16.045059	9.424202
5/13/2018 2:15	144000	5.612889	16.001556	9.432134
5/13/2018 2:30	144900	5.626418	16.007355	9.401298
5/13/2018 2:45	145800	5.63966	15.922516	9.371115
5/13/2018 3:00	146700	5.651335	15.96022	9.344505
5/13/2018 3:15	147600	5.667324	15.932663	9.308062
5/13/2018 3:30	148500	5.679139	15.934113	9.28113
5/13/2018 3:45	149400	5.700249	15.921783	9.233014
5/13/2018 4:00	150300	5.722678	15.873199	9.181891

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/13/2018 4:15	151200	5.742254	15.890594	9.137273
5/13/2018 4:30	152100	5.767169	15.861588	9.080482
5/13/2018 4:45	153000	5.77807	15.940643	9.055635
5/13/2018 5:00	153900	5.792059	15.913071	9.023751
5/13/2018 5:15	154800	5.811753	15.882614	8.978863
5/13/2018 5:30	155700	5.798522	15.742615	9.00902
5/13/2018 5:45	156600	5.780152	15.757126	9.050891
5/13/2018 6:00	157500	5.790868	15.746979	9.026465
5/13/2018 6:15	158400	5.790041	15.752777	9.028351
5/13/2018 6:30	159300	5.793985	15.783966	9.019361
5/13/2018 6:45	160200	5.786522	15.812256	9.03637
5/13/2018 7:00	161100	5.756342	15.820236	9.10516
5/13/2018 7:15	162000	5.721262	15.832581	9.18512
5/13/2018 7:30	162900	5.79002	15.803558	9.028399
5/13/2018 7:45	163800	5.779293	15.819519	9.052849
5/13/2018 8:00	164700	5.754347	15.785416	9.109709
5/13/2018 8:15	165600	5.746843	15.822403	9.126811
5/13/2018 8:30	166500	5.723724	15.79631	9.179508
5/13/2018 8:45	167400	5.705813	15.800644	9.220332
5/13/2018 9:00	168300	5.694718	15.842728	9.245621
5/13/2018 9:15	169200	5.678802	15.818802	9.281898
5/13/2018 9:30	170100	5.669743	15.836197	9.302547
5/13/2018 9:45	171000	5.662682	15.835464	9.318642
5/13/2018 10:00	171900	5.65306	15.797028	9.340571
5/13/2018 10:15	172800	5.644722	15.793396	9.359576
5/13/2018 10:30	173700	5.635677	15.828217	9.380194
5/13/2018 10:45	174600	5.631746	15.800644	9.389154
5/13/2018 11:00	175500	5.619037	15.835464	9.418122
5/13/2018 11:15	176400	5.611263	15.821686	9.435841
5/13/2018 11:30	177300	5.596754	15.817337	9.468911
5/13/2018 11:45	178200	5.593024	15.811539	9.477413
5/13/2018 12:00	179100	5.580707	15.805725	9.505487
5/13/2018 12:15	180000	5.569914	15.781799	9.530088
5/13/2018 12:30	180900	5.556754	15.812256	9.560083
5/13/2018 12:45	181800	5.552807	15.752045	9.56908
5/13/2018 13:00	182700	5.550604	15.773819	9.5741
5/13/2018 13:15	183600	5.554964	15.855057	9.564163
5/13/2018 13:30	184500	5.570377	15.868118	9.529032
5/13/2018 13:45	185400	5.585489	15.840561	9.494588
5/13/2018 14:00	186300	5.607059	15.847809	9.445422
5/13/2018 14:15	187200	5.626089	15.839828	9.402049
5/13/2018 14:30	188100	5.645957	15.828934	9.356763

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/13/2018 14:45	189000	5.662682	15.878983	9.318642
5/13/2018 15:00	189900	5.678259	15.809357	9.283136
5/13/2018 15:15	190800	5.689674	15.773819	9.257118
5/13/2018 15:30	191700	5.700507	15.852875	9.232426
5/13/2018 15:45	192600	5.711136	15.806442	9.2082
5/13/2018 16:00	193500	5.723099	15.846359	9.180933
5/13/2018 16:15	194400	5.731525	15.775986	9.161727
5/13/2018 16:30	195300	5.750547	15.799927	9.11837
5/13/2018 16:45	196200	5.770324	15.756409	9.073291
5/13/2018 17:00	197100	5.784313	15.812988	9.041408
5/13/2018 17:15	198000	5.79911	15.826767	9.00768
5/13/2018 17:30	198900	5.817085	15.789047	8.966708
5/13/2018 17:45	199800	5.832303	15.791931	8.932022
5/13/2018 18:00	200700	5.835314	15.830399	8.925159
5/13/2018 18:15	201600	5.849865	15.786865	8.891994
5/13/2018 18:30	202500	5.84266	15.804276	8.908415
5/13/2018 18:45	203400	5.844027	15.763641	8.905301
5/13/2018 19:00	204300	5.841026	15.741882	8.912139
5/13/2018 19:15	205200	5.831298	15.74118	8.934313
5/13/2018 19:30	206100	5.821574	15.797745	8.956477
5/13/2018 19:45	207000	5.810502	15.713593	8.981714
5/13/2018 20:00	207900	5.797474	15.767288	9.011409
5/13/2018 20:15	208800	5.784154	15.765106	9.041769
5/13/2018 20:30	209700	5.773273	15.79921	9.066571
5/13/2018 20:45	210600	5.763224	15.795578	9.089476
5/13/2018 21:00	211500	5.751906	15.779617	9.115273
5/13/2018 21:15	212400	5.738155	15.802826	9.146615
5/13/2018 21:30	213300	5.728111	15.774536	9.169508
5/13/2018 21:45	214200	5.7102	15.829666	9.210332
5/13/2018 22:00	215100	5.697756	15.785416	9.238696
5/13/2018 22:15	216000	5.677592	15.810822	9.284657
5/13/2018 22:30	216900	5.68347	15.688934	9.271258
5/13/2018 22:45	217800	5.699469	15.703445	9.234792
5/13/2018 23:00	218700	5.646503	15.700546	9.355518
5/13/2018 23:15	219600	5.647334	15.705627	9.353624
5/13/2018 23:30	220500	5.642244	15.764374	9.365225
5/13/2018 23:45	221400	5.636743	15.719406	9.377764
5/14/2018 0:00	222300	5.63879	15.790512	9.373099
5/14/2018 0:15	223200	5.643569	15.811539	9.362205
5/14/2018 0:30	224100	5.648613	15.791229	9.350709
5/14/2018 0:45	225000	5.662501	15.750595	9.319053
5/14/2018 1:00	225900	5.671187	15.783966	9.299254

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/14/2018 1:15	226800	5.686975	15.781799	9.263269
5/14/2018 1:30	227700	5.702469	15.768738	9.227953
5/14/2018 1:45	228600	5.723456	15.79631	9.180119
5/14/2018 2:00	229500	5.746308	15.759308	9.128032
5/14/2018 2:15	230400	5.764864	15.772354	9.085737
5/14/2018 2:30	231300	5.790253	15.820969	9.027867
5/14/2018 2:45	232200	5.814242	15.815155	8.973189
5/14/2018 3:00	233100	5.839826	15.79631	8.914876
5/14/2018 3:15	234000	5.866045	15.778885	8.855115
5/14/2018 3:30	234900	5.894172	15.820969	8.791004
5/14/2018 3:45	235800	5.922421	15.78978	8.726616
5/14/2018 4:00	236700	5.940199	15.79631	8.686094
5/14/2018 4:15	237600	5.960423	15.815887	8.639998
5/14/2018 4:30	238500	5.981521	15.78833	8.591909
5/14/2018 4:45	239400	5.999269	15.817337	8.551455
5/14/2018 5:00	240300	6.015431	15.779617	8.514616
5/14/2018 5:15	241200	6.027404	15.787598	8.487327
5/14/2018 5:30	242100	6.040579	15.810089	8.457297
5/14/2018 5:45	243000	6.046154	15.833298	8.444592
5/14/2018 6:00	243900	6.05839	15.784683	8.416701
5/14/2018 6:15	244800	6.063293	15.762207	8.405525
5/14/2018 6:30	245700	6.059822	15.818069	8.413437
5/14/2018 6:45	246600	6.065542	15.78833	8.400398
5/14/2018 7:00	247500	6.062454	15.812256	8.407436
5/14/2018 7:15	248400	6.057467	15.760757	8.418803
5/14/2018 7:30	249300	6.049978	15.77092	8.435873
5/14/2018 7:45	250200	6.03941	15.749146	8.459962
5/14/2018 8:00	251100	6.027795	15.76149	8.486437
5/14/2018 8:15	252000	6.015025	15.720123	8.515543
5/14/2018 8:30	252900	5.995791	15.781067	8.559383
5/14/2018 8:45	253800	5.979432	15.725937	8.59667
5/14/2018 9:00	254700	5.959403	15.794846	8.642323
5/14/2018 9:15	255600	5.94385	15.773819	8.677773
5/14/2018 9:30	256500	5.928472	15.723022	8.712824
5/14/2018 9:45	257400	5.917846	15.785416	8.737043
5/14/2018 10:00	258300	5.904901	15.75351	8.766549
5/14/2018 10:15	259200	5.890689	15.805008	8.798942
5/14/2018 10:30	260100	5.874653	15.760757	8.835493

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/11/2018 10:15	0	5.604912	15.989212	9.450317
5/11/2018 10:30	900	5.596876	15.836197	9.468633
5/11/2018 10:45	1800	5.588228	15.78978	9.488345
5/11/2018 11:00	2700	5.579917	15.78833	9.507288
5/11/2018 11:15	3600	5.577086	15.752777	9.513741
5/11/2018 11:30	4500	5.571008	15.797745	9.527595
5/11/2018 11:45	5400	5.568678	15.817337	9.532906
5/11/2018 12:00	6300	5.572311	15.79631	9.524624
5/11/2018 12:15	7200	5.577358	15.798477	9.513122
5/11/2018 12:30	8100	5.580554	15.775986	9.505836
5/11/2018 12:45	9000	5.590924	15.813705	9.482201
5/11/2018 13:00	9900	5.598692	15.740433	9.464493
5/11/2018 13:15	10800	5.610847	15.817337	9.436788
5/11/2018 13:30	11700	5.626132	15.759308	9.40195
5/11/2018 13:45	12600	5.633556	15.782516	9.385027
5/11/2018 14:00	13500	5.64714	15.78978	9.354066
5/11/2018 14:15	14400	5.651894	15.757126	9.34323
5/11/2018 14:30	15300	5.664321	15.775986	9.314905
5/11/2018 14:45	16200	5.67363	15.782516	9.293687
5/11/2018 15:00	17100	5.678659	15.791229	9.282224
5/11/2018 15:15	18000	5.688479	15.768738	9.259841
5/11/2018 15:30	18900	5.691298	15.74118	9.253416
5/11/2018 15:45	19800	5.696645	15.768021	9.241228
5/11/2018 16:00	20700	5.697726	15.732468	9.238766
5/11/2018 16:15	21600	5.703305	15.777435	9.226049
5/11/2018 16:30	22500	5.703308	15.765839	9.226042
5/11/2018 16:45	23400	5.700272	15.763641	9.232963
5/11/2018 17:00	24300	5.695213	15.767288	9.244493
5/11/2018 17:15	25200	5.688635	15.806442	9.259486
5/11/2018 17:30	26100	5.689889	15.801376	9.256628
5/11/2018 17:45	27000	5.677376	15.786133	9.28515
5/11/2018 18:00	27900	5.672374	15.798477	9.29655
5/11/2018 18:15	28800	5.661374	15.768021	9.321622
5/11/2018 18:30	29700	5.649514	15.727386	9.348655
5/11/2018 18:45	30600	5.635287	15.749146	9.381083
5/11/2018 19:00	31500	5.622747	15.809357	9.409664
5/11/2018 19:15	32400	5.611624	15.831116	9.435018
5/11/2018 19:30	33300	5.595615	15.828934	9.471506
5/11/2018 19:45	34200	5.579443	15.819519	9.508368
5/11/2018 20:00	35100	5.563758	15.744064	9.544119
5/11/2018 20:15	36000	5.546373	15.757126	9.583744
5/11/2018 20:30	36900	5.537061	15.733917	9.604971

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/11/2018 20:45	37800	5.524289	15.771637	9.634081
5/11/2018 21:00	38700	5.520245	15.766556	9.6433
5/11/2018 21:15	39600	5.512322	15.773819	9.661358
5/11/2018 21:30	40500	5.506593	15.780334	9.674417
5/11/2018 21:45	41400	5.500749	15.728821	9.687737
5/11/2018 22:00	42300	5.498342	15.780334	9.693223
5/11/2018 22:15	43200	5.49668	15.776718	9.697011
5/11/2018 22:30	44100	5.48991	15.738266	9.712441
5/11/2018 22:45	45000	5.491127	15.774536	9.709668
5/11/2018 23:00	45900	5.492172	15.74118	9.707286
5/11/2018 23:15	46800	5.496285	15.730286	9.69791
5/11/2018 23:30	47700	5.498791	15.774536	9.6922
5/11/2018 23:45	48600	5.509099	15.736084	9.668703
5/12/2018 0:00	49500	5.524065	15.715775	9.634591
5/12/2018 0:15	50400	5.532683	15.739716	9.614949
5/12/2018 0:30	51300	5.55293	15.723022	9.5688
5/12/2018 0:45	52200	5.570026	15.766556	9.529833
5/12/2018 1:00	53100	5.592467	15.759308	9.478683
5/12/2018 1:15	54000	5.624647	15.808624	9.405334
5/12/2018 1:30	54900	5.64496	15.794128	9.359035
5/12/2018 1:45	55800	5.673532	15.807175	9.293909
5/12/2018 2:00	56700	5.700007	15.825317	9.233565
5/12/2018 2:15	57600	5.722133	15.780334	9.183133
5/12/2018 2:30	58500	5.739655	15.844177	9.143195
5/12/2018 2:45	59400	5.759961	15.79921	9.096912
5/12/2018 3:00	60300	5.774134	15.74118	9.064609
5/12/2018 3:15	61200	5.790722	15.779617	9.026798
5/12/2018 3:30	62100	5.805985	15.773087	8.992008
5/12/2018 3:45	63000	5.819239	15.799927	8.961801
5/12/2018 4:00	63900	5.832016	15.826767	8.932676
5/12/2018 4:15	64800	5.845804	15.799927	8.901249
5/12/2018 4:30	65700	5.858938	15.799927	8.871313
5/12/2018 4:45	66600	5.873051	15.792679	8.839146
5/12/2018 5:00	67500	5.885297	15.762939	8.811233
5/12/2018 5:15	68400	5.902184	15.754944	8.772742
5/12/2018 5:30	69300	5.910266	15.823135	8.75432
5/12/2018 5:45	70200	5.921464	15.823868	8.728797
5/12/2018 6:00	71100	5.922467	15.786865	8.72651
5/12/2018 6:15	72000	5.91536	15.741882	8.742709
5/12/2018 6:30	72900	5.900195	15.717957	8.777275
5/12/2018 6:45	73800	5.884364	15.744064	8.81336
5/12/2018 7:00	74700	5.866552	15.737534	8.853959

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/12/2018 7:15	75600	5.848026	15.760757	8.896184
5/12/2018 7:30	76500	5.828081	15.757843	8.941647
5/12/2018 7:45	77400	5.816419	15.785416	8.968227
5/12/2018 8:00	78300	5.803721	15.755676	8.997169
5/12/2018 8:15	79200	5.789614	15.794846	9.029325
5/12/2018 8:30	80100	5.782405	15.732468	9.045755
5/12/2018 8:45	81000	5.770391	15.76149	9.073138
5/12/2018 9:00	81900	5.752647	15.752045	9.113583
5/12/2018 9:15	82800	5.741057	15.749146	9.139999
5/12/2018 9:30	83700	5.726649	15.727386	9.17284
5/12/2018 9:45	84600	5.712337	15.774536	9.205462
5/12/2018 10:00	85500	5.687479	15.729553	9.262122
5/12/2018 10:15	86400	5.678107	15.718689	9.283484
5/12/2018 10:30	87300	5.657043	15.719406	9.331493
5/12/2018 10:45	88200	5.649327	15.742615	9.349081
5/12/2018 11:00	89100	5.642457	15.758575	9.364741
5/12/2018 11:15	90000	5.632819	15.793396	9.386709
5/12/2018 11:30	90900	5.632872	15.765106	9.386588
5/12/2018 11:45	91800	5.628833	15.742615	9.395793
5/12/2018 12:00	92700	5.62544	15.750595	9.403527
5/12/2018 12:15	93600	5.625	15.731003	9.404531
5/12/2018 12:30	94500	5.625477	15.775986	9.403442
5/12/2018 12:45	95400	5.629373	15.790512	9.394564
5/12/2018 13:00	96300	5.635985	15.778152	9.379491
5/12/2018 13:15	97200	5.642724	15.783249	9.364131
5/12/2018 13:30	98100	5.653514	15.747711	9.339538
5/12/2018 13:45	99000	5.663663	15.723022	9.316405
5/12/2018 14:00	99900	5.671778	15.750595	9.297909
5/12/2018 14:15	100800	5.68505	15.740433	9.267656
5/12/2018 14:30	101700	5.699293	15.802109	9.235194
5/12/2018 14:45	102600	5.709339	15.782516	9.212295
5/12/2018 15:00	103500	5.721369	15.760025	9.184875
5/12/2018 15:15	104400	5.738072	15.739716	9.146803
5/12/2018 15:30	105300	5.744141	15.748428	9.132972
5/12/2018 15:45	106200	5.753786	15.760025	9.110988
5/12/2018 16:00	107100	5.771327	15.71431	9.071005
5/12/2018 16:15	108000	5.774392	15.723022	9.06402
5/12/2018 16:30	108900	5.781152	15.773819	9.048612
5/12/2018 16:45	109800	5.785321	15.756409	9.039108
5/12/2018 17:00	110700	5.793712	15.774536	9.019984
5/12/2018 17:15	111600	5.791736	15.756409	9.024488
5/12/2018 17:30	112500	5.79128	15.755676	9.025526

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/12/2018 17:45	113400	5.789596	15.789047	9.029366
5/12/2018 18:00	114300	5.781522	15.768738	9.047768
5/12/2018 18:15	115200	5.773223	15.804276	9.066683
5/12/2018 18:30	116100	5.760875	15.748428	9.094829
5/12/2018 18:45	117000	5.752136	15.735352	9.114747
5/12/2018 19:00	117900	5.742916	15.723755	9.135764
5/12/2018 19:15	118800	5.732948	15.697647	9.158484
5/12/2018 19:30	119700	5.717723	15.723022	9.193185
5/12/2018 19:45	120600	5.709277	15.757843	9.212437
5/12/2018 20:00	121500	5.690743	15.734634	9.254681
5/12/2018 20:15	122400	6.347824	21.286255	7.756992
5/12/2018 20:30	123300	5.867064	20.132248	8.852792
5/12/2018 20:45	124200	5.88265	18.922516	8.817266
5/12/2018 21:00	125100	5.669978	18.206543	9.302012
5/12/2018 21:15	126000	5.660747	17.692093	9.323051
5/12/2018 21:30	126900	5.671546	17.373215	9.298437
5/12/2018 21:45	127800	5.652238	17.04039	9.342445
5/12/2018 22:00	128700	5.610109	16.831192	9.438472
5/12/2018 22:15	129600	5.622787	16.701569	9.409573
5/12/2018 22:30	130500	5.588913	16.559616	9.486782
5/12/2018 22:45	131400	5.579877	16.431381	9.507379
5/12/2018 23:00	132300	5.553765	16.303116	9.566895
5/12/2018 23:15	133200	5.525794	16.279938	9.630652
5/12/2018 23:30	134100	5.509023	16.238617	9.668878
5/12/2018 23:45	135000	5.467304	16.163239	9.763968
5/13/2018 0:00	135900	5.482617	16.167587	9.729064
5/13/2018 0:15	136800	5.472226	16.158157	9.752748
5/13/2018 0:30	137700	5.500278	16.146561	9.688808
5/13/2018 0:45	138600	5.510195	16.162521	9.666206
5/13/2018 1:00	139500	5.541763	16.116837	9.594254
5/13/2018 1:15	140400	5.573404	16.089279	9.522134
5/13/2018 1:30	141300	5.589344	16.064636	9.485802
5/13/2018 1:45	142200	5.600864	16.045059	9.459542
5/13/2018 2:00	143100	5.616369	16.045059	9.424202
5/13/2018 2:15	144000	5.612889	16.001556	9.432134
5/13/2018 2:30	144900	5.626418	16.007355	9.401298
5/13/2018 2:45	145800	5.63966	15.922516	9.371115
5/13/2018 3:00	146700	5.651335	15.96022	9.344505
5/13/2018 3:15	147600	5.667324	15.932663	9.308062
5/13/2018 3:30	148500	5.679139	15.934113	9.28113
5/13/2018 3:45	149400	5.700249	15.921783	9.233014
5/13/2018 4:00	150300	5.722678	15.873199	9.181891

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/13/2018 4:15	151200	5.742254	15.890594	9.137273
5/13/2018 4:30	152100	5.767169	15.861588	9.080482
5/13/2018 4:45	153000	5.77807	15.940643	9.055635
5/13/2018 5:00	153900	5.792059	15.913071	9.023751
5/13/2018 5:15	154800	5.811753	15.882614	8.978863
5/13/2018 5:30	155700	5.798522	15.742615	9.00902
5/13/2018 5:45	156600	5.780152	15.757126	9.050891
5/13/2018 6:00	157500	5.790868	15.746979	9.026465
5/13/2018 6:15	158400	5.790041	15.752777	9.028351
5/13/2018 6:30	159300	5.793985	15.783966	9.019361
5/13/2018 6:45	160200	5.786522	15.812256	9.03637
5/13/2018 7:00	161100	5.756342	15.820236	9.10516
5/13/2018 7:15	162000	5.721262	15.832581	9.18512
5/13/2018 7:30	162900	5.79002	15.803558	9.028399
5/13/2018 7:45	163800	5.779293	15.819519	9.052849
5/13/2018 8:00	164700	5.754347	15.785416	9.109709
5/13/2018 8:15	165600	5.746843	15.822403	9.126811
5/13/2018 8:30	166500	5.723724	15.79631	9.179508
5/13/2018 8:45	167400	5.705813	15.800644	9.220332
5/13/2018 9:00	168300	5.694718	15.842728	9.245621
5/13/2018 9:15	169200	5.678802	15.818802	9.281898
5/13/2018 9:30	170100	5.669743	15.836197	9.302547
5/13/2018 9:45	171000	5.662682	15.835464	9.318642
5/13/2018 10:00	171900	5.65306	15.797028	9.340571
5/13/2018 10:15	172800	5.644722	15.793396	9.359576
5/13/2018 10:30	173700	5.635677	15.828217	9.380194
5/13/2018 10:45	174600	5.631746	15.800644	9.389154
5/13/2018 11:00	175500	5.619037	15.835464	9.418122
5/13/2018 11:15	176400	5.611263	15.821686	9.435841
5/13/2018 11:30	177300	5.596754	15.817337	9.468911
5/13/2018 11:45	178200	5.593024	15.811539	9.477413
5/13/2018 12:00	179100	5.580707	15.805725	9.505487
5/13/2018 12:15	180000	5.569914	15.781799	9.530088
5/13/2018 12:30	180900	5.556754	15.812256	9.560083
5/13/2018 12:45	181800	5.552807	15.752045	9.56908
5/13/2018 13:00	182700	5.550604	15.773819	9.5741
5/13/2018 13:15	183600	5.554964	15.855057	9.564163
5/13/2018 13:30	184500	5.570377	15.868118	9.529032
5/13/2018 13:45	185400	5.585489	15.840561	9.494588
5/13/2018 14:00	186300	5.607059	15.847809	9.445422
5/13/2018 14:15	187200	5.626089	15.839828	9.402049
5/13/2018 14:30	188100	5.645957	15.828934	9.356763

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/13/2018 14:45	189000	5.662682	15.878983	9.318642
5/13/2018 15:00	189900	5.678259	15.809357	9.283136
5/13/2018 15:15	190800	5.689674	15.773819	9.257118
5/13/2018 15:30	191700	5.700507	15.852875	9.232426
5/13/2018 15:45	192600	5.711136	15.806442	9.2082
5/13/2018 16:00	193500	5.723099	15.846359	9.180933
5/13/2018 16:15	194400	5.731525	15.775986	9.161727
5/13/2018 16:30	195300	5.750547	15.799927	9.11837
5/13/2018 16:45	196200	5.770324	15.756409	9.073291
5/13/2018 17:00	197100	5.784313	15.812988	9.041408
5/13/2018 17:15	198000	5.79911	15.826767	9.00768
5/13/2018 17:30	198900	5.817085	15.789047	8.966708
5/13/2018 17:45	199800	5.832303	15.791931	8.932022
5/13/2018 18:00	200700	5.835314	15.830399	8.925159
5/13/2018 18:15	201600	5.849865	15.786865	8.891994
5/13/2018 18:30	202500	5.84266	15.804276	8.908415
5/13/2018 18:45	203400	5.844027	15.763641	8.905301
5/13/2018 19:00	204300	5.841026	15.741882	8.912139
5/13/2018 19:15	205200	5.831298	15.74118	8.934313
5/13/2018 19:30	206100	5.821574	15.797745	8.956477
5/13/2018 19:45	207000	5.810502	15.713593	8.981714
5/13/2018 20:00	207900	5.797474	15.767288	9.011409
5/13/2018 20:15	208800	5.784154	15.765106	9.041769
5/13/2018 20:30	209700	5.773273	15.79921	9.066571
5/13/2018 20:45	210600	5.763224	15.795578	9.089476
5/13/2018 21:00	211500	5.751906	15.779617	9.115273
5/13/2018 21:15	212400	5.738155	15.802826	9.146615
5/13/2018 21:30	213300	5.728111	15.774536	9.169508
5/13/2018 21:45	214200	5.7102	15.829666	9.210332
5/13/2018 22:00	215100	5.697756	15.785416	9.238696
5/13/2018 22:15	216000	5.677592	15.810822	9.284657
5/13/2018 22:30	216900	5.68347	15.688934	9.271258
5/13/2018 22:45	217800	5.699469	15.703445	9.234792
5/13/2018 23:00	218700	5.646503	15.700546	9.355518
5/13/2018 23:15	219600	5.647334	15.705627	9.353624
5/13/2018 23:30	220500	5.642244	15.764374	9.365225
5/13/2018 23:45	221400	5.636743	15.719406	9.377764
5/14/2018 0:00	222300	5.63879	15.790512	9.373099
5/14/2018 0:15	223200	5.643569	15.811539	9.362205
5/14/2018 0:30	224100	5.648613	15.791229	9.350709
5/14/2018 0:45	225000	5.662501	15.750595	9.319053
5/14/2018 1:00	225900	5.671187	15.783966	9.299254

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/14/2018 1:15	226800	5.686975	15.781799	9.263269
5/14/2018 1:30	227700	5.702469	15.768738	9.227953
5/14/2018 1:45	228600	5.723456	15.79631	9.180119
5/14/2018 2:00	229500	5.746308	15.759308	9.128032
5/14/2018 2:15	230400	5.764864	15.772354	9.085737
5/14/2018 2:30	231300	5.790253	15.820969	9.027867
5/14/2018 2:45	232200	5.814242	15.815155	8.973189
5/14/2018 3:00	233100	5.839826	15.79631	8.914876
5/14/2018 3:15	234000	5.866045	15.778885	8.855115
5/14/2018 3:30	234900	5.894172	15.820969	8.791004
5/14/2018 3:45	235800	5.922421	15.78978	8.726616
5/14/2018 4:00	236700	5.940199	15.79631	8.686094
5/14/2018 4:15	237600	5.960423	15.815887	8.639998
5/14/2018 4:30	238500	5.981521	15.78833	8.591909
5/14/2018 4:45	239400	5.999269	15.817337	8.551455
5/14/2018 5:00	240300	6.015431	15.779617	8.514616
5/14/2018 5:15	241200	6.027404	15.787598	8.487327
5/14/2018 5:30	242100	6.040579	15.810089	8.457297
5/14/2018 5:45	243000	6.046154	15.833298	8.444592
5/14/2018 6:00	243900	6.05839	15.784683	8.416701
5/14/2018 6:15	244800	6.063293	15.762207	8.405525
5/14/2018 6:30	245700	6.059822	15.818069	8.413437
5/14/2018 6:45	246600	6.065542	15.78833	8.400398
5/14/2018 7:00	247500	6.062454	15.812256	8.407436
5/14/2018 7:15	248400	6.057467	15.760757	8.418803
5/14/2018 7:30	249300	6.049978	15.77092	8.435873
5/14/2018 7:45	250200	6.03941	15.749146	8.459962
5/14/2018 8:00	251100	6.027795	15.76149	8.486437
5/14/2018 8:15	252000	6.015025	15.720123	8.515543
5/14/2018 8:30	252900	5.995791	15.781067	8.559383
5/14/2018 8:45	253800	5.979432	15.725937	8.59667
5/14/2018 9:00	254700	5.959403	15.794846	8.642323
5/14/2018 9:15	255600	5.94385	15.773819	8.677773
5/14/2018 9:30	256500	5.928472	15.723022	8.712824
5/14/2018 9:45	257400	5.917846	15.785416	8.737043
5/14/2018 10:00	258300	5.904901	15.75351	8.766549
5/14/2018 10:15	259200	5.890689	15.805008	8.798942
5/14/2018 10:30	260100	5.874653	15.760757	8.835493
5/14/2018 10:45	261000	5.877454	15.784683	8.82911
5/14/2018 11:00	261900	5.869639	15.765839	8.846921
5/14/2018 11:15	262800	5.769399	15.783966	9.075399
5/14/2018 11:30	263700	5.663251	15.708511	9.317344

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/14/2018 11:45	264600	5.613334	15.731735	9.43112
5/14/2018 12:00	265500	5.578241	15.694	9.511108
5/14/2018 12:15	266400	5.534317	15.708511	9.611224
5/14/2018 12:30	267300	5.513657	15.717957	9.658316
5/14/2018 12:45	268200	5.48477	15.702713	9.724157
5/14/2018 13:00	269100	5.466979	15.69545	9.764709
5/14/2018 13:15	270000	5.446193	15.705627	9.812087
5/14/2018 13:30	270900	5.433877	15.731003	9.840159
5/14/2018 13:45	271800	5.429425	15.722305	9.850306
5/14/2018 14:00	272700	5.433614	15.718689	9.840757
5/14/2018 14:15	273600	5.432627	15.723755	9.843007
5/14/2018 14:30	274500	5.43904	15.757843	9.828391
5/14/2018 14:45	275400	5.448157	15.724487	9.807609
5/14/2018 15:00	276300	5.456113	15.748428	9.789474
5/14/2018 15:15	277200	5.469369	15.749146	9.759261
5/14/2018 15:30	278100	5.48278	15.781067	9.728693
5/14/2018 15:45	279000	5.495421	15.787598	9.69988
5/14/2018 16:00	279900	5.507488	15.765106	9.672376
5/14/2018 16:15	280800	5.520324	15.765839	9.64312
5/14/2018 16:30	281700	5.53169	15.754944	9.617213
5/14/2018 16:45	282600	5.53526	15.759308	9.609075
5/14/2018 17:00	283500	5.540009	15.77092	9.598249
5/14/2018 17:15	284400	5.548267	15.74118	9.579429
5/14/2018 17:30	285300	5.558222	15.771637	9.556738
5/14/2018 17:45	286200	5.564544	15.775269	9.542327
5/14/2018 18:00	287100	5.567882	15.802826	9.53472
5/14/2018 18:15	288000	5.573666	15.763641	9.521537
5/14/2018 18:30	288900	5.567534	15.768021	9.535512
5/14/2018 18:45	289800	5.570272	15.759308	9.529272
5/14/2018 19:00	290700	5.565465	15.749878	9.540229
5/14/2018 19:15	291600	5.553781	15.821686	9.56686
5/14/2018 19:30	292500	5.551021	15.75351	9.573152
5/14/2018 19:45	293400	5.539141	15.728104	9.60023
5/14/2018 20:00	294300	5.531815	15.735352	9.616928
5/14/2018 20:15	295200	5.516732	15.723755	9.651307
5/14/2018 20:30	296100	5.501075	15.731003	9.686993
5/14/2018 20:45	297000	5.488375	15.704895	9.715941
5/14/2018 21:00	297900	5.470433	15.696182	9.756836
5/14/2018 21:15	298800	5.455989	15.739716	9.789759
5/14/2018 21:30	299700	5.453931	15.724487	9.794448
5/14/2018 21:45	300600	5.439982	15.723755	9.826242
5/14/2018 22:00	301500	5.418322	15.746246	9.875614

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/14/2018 22:15	302400	5.401788	15.701981	9.9133
5/14/2018 22:30	303300	5.384484	15.730286	9.95274
5/14/2018 22:45	304200	5.367967	15.729553	9.990387
5/14/2018 23:00	305100	5.346609	15.698364	10.039068
5/14/2018 23:15	306000	5.329486	15.738998	10.078096
5/14/2018 23:30	306900	5.31882	15.770187	10.102408
5/14/2018 23:45	307800	5.315027	15.731003	10.111053
5/15/2018 0:00	308700	5.299268	15.75351	10.146975
5/15/2018 0:15	309600	5.309952	15.725937	10.122622
5/15/2018 0:30	310500	5.303924	15.791229	10.136362
5/15/2018 0:45	311400	5.316443	15.757126	10.107826
5/15/2018 1:00	312300	5.317007	15.760757	10.106541
5/15/2018 1:15	313200	5.331022	15.731735	10.074597
5/15/2018 1:30	314100	5.338733	15.731735	10.05702
5/15/2018 1:45	315000	5.342386	15.746979	10.048694
5/15/2018 2:00	315900	5.343187	15.756409	10.046868
5/15/2018 2:15	316800	5.348024	15.766556	10.035844
5/15/2018 2:30	317700	5.350184	15.846359	10.030919
5/15/2018 2:45	318600	5.364024	15.810089	9.999374
5/15/2018 3:00	319500	5.386563	15.806442	9.948002
5/15/2018 3:15	320400	5.415009	15.754227	9.883164
5/15/2018 3:30	321300	5.444522	15.746979	9.815895
5/15/2018 3:45	322200	5.476056	15.734634	9.74402
5/15/2018 4:00	323100	5.505587	15.754944	9.676709
5/15/2018 4:15	324000	5.536382	15.808624	9.606519
5/15/2018 4:30	324900	5.56364	15.805725	9.544389
5/15/2018 4:45	325800	5.583109	15.806442	9.500011
5/15/2018 5:00	326700	5.603076	15.732468	9.454501
5/15/2018 5:15	327600	5.620876	15.777435	9.413929
5/15/2018 5:30	328500	5.637576	15.762939	9.375865
5/15/2018 5:45	329400	5.652819	15.798477	9.341122
5/15/2018 6:00	330300	5.663936	15.801376	9.315783
5/15/2018 6:15	331200	5.667131	15.77092	9.3085
5/15/2018 6:30	332100	5.676298	15.781799	9.287605
5/15/2018 6:45	333000	5.677021	15.743332	9.285958
5/15/2018 7:00	333900	5.682167	15.76149	9.274229
5/15/2018 7:15	334800	5.68264	15.744064	9.273151
5/15/2018 7:30	335700	5.686285	15.759308	9.264843
5/15/2018 7:45	336600	5.682105	15.790512	9.27437
5/15/2018 8:00	337500	5.684414	15.786865	9.269108
5/15/2018 8:15	338400	5.676205	15.783249	9.287818
5/15/2018 8:30	339300	5.662602	15.773087	9.318824

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/15/2018 8:45	340200	5.65238	15.780334	9.342122
5/15/2018 9:00	341100	5.632646	15.713593	9.387103
5/15/2018 9:15	342000	5.615418	15.740433	9.42637
5/15/2018 9:30	342900	5.59269	15.76149	9.478174
5/15/2018 9:45	343800	5.573768	15.723755	9.521303
5/15/2018 10:00	344700	5.55094	15.702713	9.573337
5/15/2018 10:15	345600	5.532973	15.750595	9.614288
5/15/2018 10:30	346500	5.515475	15.741882	9.654172
5/15/2018 10:45	347400	5.502584	15.771637	9.683555
5/15/2018 11:00	348300	5.482162	15.709244	9.730102
5/15/2018 11:15	349200	5.481026	15.717224	9.732691
5/15/2018 11:30	350100	5.475537	15.720123	9.745201
5/15/2018 11:45	351000	5.467089	15.723022	9.764459
5/15/2018 12:00	351900	5.457001	15.781799	9.787452
5/15/2018 12:15	352800	5.44152	15.713593	9.822738
5/15/2018 12:30	353700	5.428988	15.773819	9.851302
5/15/2018 12:45	354600	5.413878	15.795578	9.885741
5/15/2018 13:00	355500	5.397255	15.775269	9.923632
5/15/2018 13:15	356400	5.38231	15.694733	9.957694
5/15/2018 13:30	357300	5.371463	15.735352	9.982418
5/15/2018 13:45	358200	5.357942	15.723022	10.013238
5/15/2018 14:00	359100	5.349511	15.749878	10.032454
5/15/2018 14:15	360000	5.342113	15.739716	10.049315
5/15/2018 14:30	360900	5.339282	15.773087	10.055771
5/15/2018 14:45	361800	5.34548	15.736084	10.041641
5/15/2018 15:00	362700	5.350052	15.738266	10.031221
5/15/2018 15:15	363600	5.355862	15.717224	10.01798
5/15/2018 15:30	364500	5.365031	15.712875	9.997079
5/15/2018 15:45	365400	5.376683	15.741882	9.970522
5/15/2018 16:00	366300	5.393325	15.688202	9.93259
5/15/2018 16:15	367200	5.409277	15.795578	9.896228
5/15/2018 16:30	368100	5.427488	15.776718	9.854721
5/15/2018 16:45	369000	5.442416	15.814423	9.820695
5/15/2018 17:00	369900	5.46105	15.755676	9.778222
5/15/2018 17:15	370800	5.476778	15.716492	9.742374
5/15/2018 17:30	371700	5.504852	15.752045	9.678385
5/15/2018 17:45	372600	5.510219	15.768021	9.666152
5/15/2018 18:00	373500	5.526786	15.78978	9.628389
5/15/2018 18:15	374400	5.542367	15.778885	9.592877
5/15/2018 18:30	375300	5.561724	15.727386	9.548755
5/15/2018 18:45	376200	5.565954	15.767288	9.539114
5/15/2018 19:00	377100	5.574812	15.777435	9.518924

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/15/2018 19:15	378000	5.568244	15.723755	9.533894
5/15/2018 19:30	378900	5.565898	15.746979	9.539242
5/15/2018 19:45	379800	5.562272	15.797028	9.547506
5/15/2018 20:00	380700	5.553077	15.790512	9.568464
5/15/2018 20:15	381600	5.558289	15.763641	9.556584
5/15/2018 20:30	382500	6.153646	15.760757	8.199584
5/15/2018 20:45	383400	6.095929	22.029953	8.331137
5/15/2018 21:00	384300	5.769515	20.184784	9.075135
5/15/2018 21:15	385200	5.696029	18.875641	9.242633
5/15/2018 21:30	386100	5.694445	18.106888	9.246244
5/15/2018 21:45	387000	5.644439	17.61113	9.360222
5/15/2018 22:00	387900	5.628335	17.279907	9.396929
5/15/2018 22:15	388800	5.586502	17.06427	9.492279
5/15/2018 22:30	389700	5.458491	16.861603	9.784056
5/15/2018 22:45	390600	5.422883	16.686371	9.865218
5/15/2018 23:00	391500	5.387843	16.527023	9.945084
5/15/2018 23:15	392400	5.364763	16.469788	9.99769
5/15/2018 23:30	393300	5.338006	16.358917	10.058678
5/15/2018 23:45	394200	5.33179	16.327774	10.072846
5/16/2018 0:00	395100	5.33012	16.245865	10.076653
5/16/2018 0:15	396000	5.328417	16.221222	10.080535
5/16/2018 0:30	396900	5.326298	16.19223	10.085364
5/16/2018 0:45	397800	5.328804	16.129898	10.079651
5/16/2018 1:00	398700	5.320717	16.133514	10.098085
5/16/2018 1:15	399600	5.312881	16.084213	10.115946
5/16/2018 1:30	400500	5.299542	16.072617	10.146349
5/16/2018 1:45	401400	5.292752	16.061722	10.161826
5/16/2018 2:00	402300	5.281083	16.022583	10.188423
5/16/2018 2:15	403200	5.266681	16.039978	10.221249
5/16/2018 2:30	404100	5.264223	16.05304	10.226851
5/16/2018 2:45	405000	5.267499	16.028381	10.219385
5/16/2018 3:00	405900	5.276258	16.065369	10.199419
5/16/2018 3:15	406800	5.299368	15.994308	10.146746
5/16/2018 3:30	407700	5.323882	15.931946	10.090872
5/16/2018 3:45	408600	5.348693	15.972549	10.034319
5/16/2018 4:00	409500	5.374217	15.966019	9.976142
5/16/2018 4:15	410400	5.408385	15.930496	9.898263
5/16/2018 4:30	411300	5.434881	15.979065	9.83787
5/16/2018 4:45	412200	5.453666	15.974716	9.795053
5/16/2018 5:00	413100	5.471844	15.926865	9.75362
5/16/2018 5:15	414000	5.495114	15.955872	9.70058
5/16/2018 5:30	414900	5.514502	15.925415	9.65639

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/16/2018 5:45	415800	5.527884	15.908722	9.625886
5/16/2018 6:00	416700	5.5553	15.963852	9.563398
5/16/2018 6:15	417600	5.570043	15.901474	9.529795
5/16/2018 6:30	418500	5.59416	15.839096	9.474824
5/16/2018 6:45	419400	5.615784	15.882614	9.425536
5/16/2018 7:00	420300	5.63358	15.852875	9.384973
5/16/2018 7:15	421200	5.643514	15.895676	9.36233
5/16/2018 7:30	422100	5.651882	15.835464	9.343258
5/16/2018 7:45	423000	5.656469	15.833298	9.332803
5/16/2018 8:00	423900	5.660496	15.851425	9.323625
5/16/2018 8:15	424800	5.659571	15.873901	9.325732
5/16/2018 8:30	425700	5.803237	15.947891	8.998272
5/16/2018 8:45	426600	5.84956	15.872467	8.892688
5/16/2018 9:00	427500	5.867478	15.895676	8.851847
5/16/2018 9:15	428400	5.877685	15.877548	8.828583
5/16/2018 9:30	429300	5.880806	15.851425	8.821468
5/16/2018 9:45	430200	5.880325	15.860855	8.822565
5/16/2018 10:00	431100	5.878622	15.858673	8.826447
5/16/2018 10:15	432000	5.868945	15.846359	8.848504
5/16/2018 10:30	432900	5.864391	15.802826	8.858883
5/16/2018 10:45	433800	5.855732	15.852875	8.878621
5/16/2018 11:00	434700	5.845377	15.839096	8.902222
5/16/2018 11:15	435600	5.839046	15.819519	8.916655
5/16/2018 11:30	436500	5.825059	15.818069	8.948533
5/16/2018 11:45	437400	5.815894	15.867386	8.969424
5/16/2018 12:00	438300	5.798381	15.823868	9.00934
5/16/2018 12:15	439200	5.78232	15.777435	9.045948
5/16/2018 12:30	440100	5.767776	15.803558	9.079101
5/16/2018 12:45	441000	5.756003	15.818069	9.105934
5/16/2018 13:00	441900	5.741092	15.811539	9.13992
5/16/2018 13:15	442800	5.728632	15.741882	9.16832
5/16/2018 13:30	443700	5.716753	15.785416	9.195397
5/16/2018 13:45	444600	5.704077	15.78978	9.224289
5/16/2018 14:00	445500	5.550016	15.730286	9.57544
5/16/2018 14:15	446400	5.472247	15.701981	9.752701
5/16/2018 14:30	447300	5.428674	15.696915	9.852017
5/16/2018 14:45	448200	5.40204	15.782516	9.912724
5/16/2018 15:00	449100	5.379985	15.752777	9.962994
5/16/2018 15:15	450000	5.358567	15.744064	10.011812
5/16/2018 15:30	450900	5.343847	15.745529	10.045363
5/16/2018 15:45	451800	5.340962	15.789047	10.051939
5/16/2018 16:00	452700	5.342876	15.780334	10.047577

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/16/2018 16:15	453600	5.348882	15.723022	10.033889
5/16/2018 16:30	454500	5.360008	15.731735	10.008528
5/16/2018 16:45	455400	5.379062	15.682404	9.965098
5/16/2018 17:00	456300	5.400724	15.730286	9.915723
5/16/2018 17:15	457200	5.41396	15.754227	9.885555
5/16/2018 17:30	458100	5.436915	15.752045	9.833233
5/16/2018 17:45	459000	5.445518	15.739716	9.813623
5/16/2018 18:00	459900	5.453898	15.754944	9.794524
5/16/2018 18:15	460800	5.457245	15.78978	9.786896
5/16/2018 18:30	461700	5.465043	15.723755	9.769121
5/16/2018 18:45	462600	5.477386	15.809357	9.740989
5/16/2018 19:00	463500	5.488954	15.768021	9.714622
5/16/2018 19:15	464400	5.497742	15.732468	9.694591
5/16/2018 19:30	465300	5.505096	15.781067	9.677828
5/16/2018 19:45	466200	5.516183	15.77092	9.652557
5/16/2018 20:00	467100	5.520178	15.701981	9.643452
5/16/2018 20:15	468000	5.5276	15.696915	9.626535
5/16/2018 20:30	468900	5.533585	15.662079	9.612894
5/16/2018 20:45	469800	5.539253	15.711426	9.599974
5/16/2018 21:00	470700	5.525618	15.760757	9.631053
5/16/2018 21:15	471600	5.516088	15.715042	9.652774
5/16/2018 21:30	472500	5.506856	15.697647	9.673816
5/16/2018 21:45	473400	5.492982	15.649017	9.70544
5/16/2018 22:00	474300	5.488824	15.590256	9.714917
5/16/2018 22:15	475200	5.475828	15.65773	9.744538
5/16/2018 22:30	476100	5.464342	15.710693	9.77072
5/16/2018 22:45	477000	5.466523	15.31369	9.765747
5/16/2018 23:00	477900	5.457427	15.099457	9.786482
5/16/2018 23:15	478800	5.43732	15.286804	9.832311
5/16/2018 23:30	479700	5.423279	15.482834	9.864314
5/16/2018 23:45	480600	5.405984	15.581528	9.903735
5/17/2018 0:00	481500	5.390154	15.637405	9.939816
5/17/2018 0:15	482400	5.36469	15.654099	9.997856
5/17/2018 0:30	483300	5.346313	15.678787	10.039744
5/17/2018 0:45	484200	5.32955	15.657013	10.077952
5/17/2018 1:00	485100	5.317407	15.719406	10.10563
5/17/2018 1:15	486000	5.30546	15.732468	10.13286
5/17/2018 1:30	486900	5.305878	15.628708	10.131908
5/17/2018 1:45	487800	5.307746	15.588058	10.127648
5/17/2018 2:00	488700	5.304805	15.686752	10.134353
5/17/2018 2:15	489600	5.309143	15.654099	10.124465
5/17/2018 2:30	490500	5.309183	15.700546	10.124374

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/17/2018 2:45	491400	5.310323	15.680222	10.121777
5/17/2018 3:00	492300	5.296691	15.707077	10.152847
5/17/2018 3:15	493200	5.300905	15.651199	10.143243
5/17/2018 3:30	494100	5.313529	15.692551	10.114469
5/17/2018 3:45	495000	5.322133	15.69545	10.094857
5/17/2018 4:00	495900	5.343032	15.725204	10.047222
5/17/2018 4:15	496800	5.363201	15.720123	10.00125
5/17/2018 4:30	497700	5.385686	15.734634	9.950001
5/17/2018 4:45	498600	5.411613	15.760025	9.890903
5/17/2018 5:00	499500	5.445326	15.805008	9.814063
5/17/2018 5:15	500400	5.475855	15.782516	9.744476
5/17/2018 5:30	501300	5.504391	15.738998	9.679435
5/17/2018 5:45	502200	5.529302	15.812256	9.622656
5/17/2018 6:00	503100	5.550265	15.780334	9.574875
5/17/2018 6:15	504000	5.573364	15.781067	9.522224
5/17/2018 6:30	504900	5.586698	15.839096	9.491833
5/17/2018 6:45	505800	5.608803	15.71431	9.441448
5/17/2018 7:00	506700	5.620914	15.754227	9.413843
5/17/2018 7:15	507600	5.638416	15.778885	9.373951
5/17/2018 7:30	508500	5.655088	15.744797	9.335949
5/17/2018 7:45	509400	5.666673	15.775986	9.309544
5/17/2018 8:00	510300	5.67393	15.736084	9.293004
5/17/2018 8:15	511200	5.667813	15.575729	9.306945
5/17/2018 8:30	512100	5.659543	15.592422	9.325796
5/17/2018 8:45	513000	5.623928	15.627243	9.406973
5/17/2018 9:00	513900	5.650125	15.627243	9.347262
5/17/2018 9:15	514800	5.654175	15.723022	9.338031
5/17/2018 9:30	515700	5.58595	15.731003	9.493537
5/17/2018 9:45	516600	5.598382	15.728821	9.465199
5/17/2018 10:00	517500	5.664616	15.728821	9.314234
5/17/2018 10:15	518400	5.648662	15.663544	9.350597
5/17/2018 10:30	519300	5.60662	15.736084	9.446424
5/17/2018 10:45	520200	5.539785	15.683853	9.598761
5/17/2018 11:00	521100	5.567329	15.692551	9.535979
5/17/2018 11:15	522000	5.559918	15.71431	9.552871
5/17/2018 11:30	522900	5.532976	15.717957	9.614281
5/17/2018 11:45	523800	5.494466	15.660629	9.702057
5/17/2018 12:00	524700	5.471678	15.66716	9.753998
5/17/2018 12:15	525600	5.46626	15.678055	9.766348
5/17/2018 12:30	526500	5.473447	15.643219	9.749966
5/17/2018 12:45	527400	5.426332	15.710693	9.857354
5/17/2018 13:00	528300	5.397235	15.689651	9.923676

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/17/2018 13:15	529200	5.366265	15.723022	9.994267
5/17/2018 13:30	530100	5.340493	15.674408	10.05301
5/17/2018 13:45	531000	5.319885	15.678787	10.09998
5/17/2018 14:00	531900	5.278369	15.660629	10.194609
5/17/2018 14:15	532800	5.220914	15.704895	10.325565
5/17/2018 14:30	533700	5.204013	15.627975	10.364088
5/17/2018 14:45	534600	5.203938	15.686752	10.36426
5/17/2018 15:00	535500	5.203383	15.681671	10.365524
5/17/2018 15:15	536400	5.183911	15.680222	10.409907
5/17/2018 15:30	537300	5.18529	15.680939	10.406764
5/17/2018 15:45	538200	5.167935	15.680939	10.446322
5/17/2018 16:00	539100	5.150329	15.687469	10.486452
5/17/2018 16:15	540000	5.156353	15.650482	10.472721
5/17/2018 16:30	540900	5.168086	15.658463	10.445978
5/17/2018 16:45	541800	5.204373	15.661362	10.363268
5/17/2018 17:00	542700	5.253618	15.732468	10.251023
5/17/2018 17:15	543600	5.335495	15.775269	10.064402
5/17/2018 17:30	544500	5.36074	15.74118	10.00686
5/17/2018 17:45	545400	5.376883	15.735352	9.970066
5/17/2018 18:00	546300	5.397711	15.728104	9.922592
5/17/2018 18:15	547200	5.414935	15.722305	9.883332
5/17/2018 18:30	548100	5.431583	15.770187	9.845387
5/17/2018 18:45	549000	5.452429	15.717224	9.797872
5/17/2018 19:00	549900	5.475768	15.752045	9.744676
5/17/2018 19:15	550800	5.495392	15.757126	9.699947
5/17/2018 19:30	551700	5.512269	15.810822	9.66148
5/17/2018 19:45	552600	5.527617	15.747711	9.626497
5/17/2018 20:00	553500	5.542652	15.719406	9.592226
5/17/2018 20:15	554400	5.554059	15.750595	9.566226
5/17/2018 20:30	555300	5.565474	15.778885	9.540209
5/17/2018 20:45	556200	5.576365	15.76149	9.515384
5/17/2018 21:00	557100	5.577818	15.702713	9.512073
5/17/2018 21:15	558000	5.582526	15.736816	9.501341
5/17/2018 21:30	558900	5.579013	15.711426	9.509349
5/17/2018 21:45	559800	5.575559	15.764374	9.517222
5/17/2018 22:00	560700	5.569487	15.731003	9.531061
5/17/2018 22:15	561600	5.559652	15.702713	9.553478
5/17/2018 22:30	562500	5.549731	15.728104	9.576091
5/17/2018 22:45	563400	5.539167	15.787598	9.600169
5/17/2018 23:00	564300	5.524925	15.733917	9.632632
5/17/2018 23:15	565200	5.511295	15.723755	9.663698
5/17/2018 23:30	566100	5.495149	15.709244	9.700501

MW-64A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 69ft SN#: 532957 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 532957 Temperature (C)	Sensor: Pres(G) 69ft SN#: 532957 Level Depth To Water (ft)
5/17/2018 23:45	567000	5.484823	15.728821	9.724037
5/18/2018 0:00	567900	5.470724	15.743332	9.756173
5/18/2018 0:15	568800	5.455479	15.793396	9.790921
5/18/2018 0:30	569700	5.443166	15.658463	9.818985
5/18/2018 0:45	570600	5.422677	15.669342	9.865686
5/18/2018 1:00	571500	5.408022	15.675873	9.89909
5/18/2018 1:15	572400	5.387675	15.696182	9.945467
5/18/2018 1:30	573300	5.379467	15.658463	9.964174
5/18/2018 1:45	574200	5.373391	15.681671	9.978024
5/18/2018 2:00	575100	5.372239	15.687469	9.98065
5/18/2018 2:15	576000	5.367091	15.707077	9.992385
5/18/2018 2:30	576900	5.364651	15.639587	9.997946
5/18/2018 2:45	577800	5.35981	15.637405	10.00898
5/18/2018 3:00	578700	5.362062	15.628708	10.003846
5/18/2018 3:15	579600	5.35672	15.634506	10.016022
5/18/2018 3:30	580500	5.359031	15.663544	10.010756
5/18/2018 3:45	581400	5.362487	15.641769	10.002878
5/18/2018 4:00	582300	5.371153	15.644684	9.983126
5/18/2018 4:15	583200	5.380347	15.63887	9.96217
5/18/2018 4:30	584100	5.398715	15.630875	9.920302
5/18/2018 4:45	585000	5.415706	15.68602	9.881577
5/18/2018 5:00	585900	5.436603	15.748428	9.833946
5/18/2018 5:15	586800	5.454781	15.71431	9.792513
5/18/2018 5:30	587700	5.483336	15.692551	9.727426
5/18/2018 5:45	588600	5.506928	15.739716	9.673652
5/18/2018 6:00	589500	5.545106	15.717957	9.586634
5/18/2018 6:15	590400	5.567584	15.755676	9.535398
5/18/2018 6:30	591300	5.595568	15.744064	9.471615
5/18/2018 6:45	592200	5.617825	15.707794	9.420884
5/18/2018 7:00	593100	5.631917	15.731003	9.388764
5/18/2018 7:15	594000	5.648579	15.711426	9.350786
5/18/2018 7:30	594900	5.823411	15.752777	8.952291
5/18/2018 7:45	595800	5.888125	15.769455	8.804786
5/18/2018 8:00	596700	5.918228	15.794128	8.736174
5/18/2018 8:15	597600	5.94654	15.721573	8.671641

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/11/2018 10:00	0	11.722988	16.514175	9.651923
5/11/2018 10:15	900	11.729275	16.458313	9.637594
5/11/2018 10:30	1800	11.718973	16.451797	9.661075
5/11/2018 10:45	2700	11.722988	16.438721	9.651923
5/11/2018 11:00	3600	11.702372	16.424957	9.698915
5/11/2018 11:15	4500	11.702799	16.431473	9.697941
5/11/2018 11:30	5400	11.699211	16.40535	9.706119
5/11/2018 11:45	6300	11.690258	16.419861	9.726525
5/11/2018 12:00	7200	11.680405	16.421326	9.748984
5/11/2018 12:15	8100	11.696529	16.443085	9.712232
5/11/2018 12:30	9000	11.710419	16.398102	9.680573
5/11/2018 12:45	9900	11.722088	16.418411	9.653975
5/11/2018 13:00	10800	11.726549	16.407532	9.643806
5/11/2018 13:15	11700	11.726992	16.421326	9.642798
5/11/2018 13:30	12600	11.752537	16.435089	9.584573
5/11/2018 13:45	13500	11.751638	16.398819	9.58662
5/11/2018 14:00	14400	11.770008	16.430756	9.54475
5/11/2018 14:15	15300	11.77986	16.384323	9.522296
5/11/2018 14:30	16200	11.790169	16.408264	9.498798
5/11/2018 14:45	17100	11.789259	16.446701	9.500872
5/11/2018 15:00	18000	11.813934	16.402466	9.444629
5/11/2018 15:15	18900	11.800476	16.403183	9.475305
5/11/2018 15:30	19800	11.81036	16.396652	9.452776
5/11/2018 15:45	20700	11.805382	16.406815	9.464123
5/11/2018 16:00	21600	11.816605	16.400284	9.438542
5/11/2018 16:15	22500	11.813934	16.396652	9.444629
5/11/2018 16:30	23400	11.822416	16.396652	9.425296
5/11/2018 16:45	24300	11.801826	16.411148	9.472227
5/11/2018 17:00	25200	11.804079	16.424957	9.467093
5/11/2018 17:15	26100	11.798681	16.398819	9.479396
5/11/2018 17:30	27000	11.786142	16.37706	9.507976
5/11/2018 17:45	27900	11.783884	16.411896	9.513123
5/11/2018 18:00	28800	11.788836	16.416245	9.501837
5/11/2018 18:15	29700	11.768667	16.416245	9.547807
5/11/2018 18:30	30600	11.75835	16.42276	9.571322
5/11/2018 18:45	31500	11.748962	16.427856	9.59272
5/11/2018 19:00	32400	11.738192	16.420593	9.61727
5/11/2018 19:15	33300	11.718039	16.406815	9.663205
5/11/2018 19:30	34200	11.710882	16.385773	9.679517
5/11/2018 19:45	35100	11.704111	16.406815	9.69495
5/11/2018 20:00	36000	11.678598	16.410446	9.753101
5/11/2018 20:15	36900	11.663811	16.407532	9.786807

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/11/2018 20:30	37800	11.669201	16.40535	9.774521
5/11/2018 20:45	38700	11.652172	16.416962	9.813335
5/11/2018 21:00	39600	11.645004	16.411148	9.829673
5/11/2018 21:15	40500	11.633358	16.425674	9.856218
5/11/2018 21:30	41400	11.624851	16.41478	9.875607
5/11/2018 21:45	42300	11.629753	16.408981	9.864435
5/11/2018 22:00	43200	11.626637	16.397385	9.871538
5/11/2018 22:15	44100	11.634691	16.401016	9.853179
5/11/2018 22:30	45000	11.632914	16.421326	9.857231
5/11/2018 22:45	45900	11.613642	16.42276	9.901157
5/11/2018 23:00	46800	11.611387	16.400284	9.906297
5/11/2018 23:15	47700	11.620796	16.409714	9.884851
5/11/2018 23:30	48600	11.63069	16.37706	9.8623
5/11/2018 23:45	49500	11.632452	16.396652	9.858283
5/12/2018 0:00	50400	11.651264	16.382874	9.815405
5/12/2018 0:15	51300	11.65172	16.393021	9.814365
5/12/2018 0:30	52200	11.67322	16.426407	9.765361
5/12/2018 0:45	53100	11.691597	16.393753	9.723474
5/12/2018 1:00	54000	11.731003	16.390854	9.633656
5/12/2018 1:15	54900	11.739527	16.382141	9.614227
5/12/2018 1:30	55800	11.767296	16.410446	9.550933
5/12/2018 1:45	56700	11.806721	16.403915	9.461071
5/12/2018 2:00	57600	11.810328	16.393021	9.45285
5/12/2018 2:15	58500	11.830059	16.406082	9.407876
5/12/2018 2:30	59400	11.850185	16.388672	9.362001
5/12/2018 2:45	60300	11.881119	16.390121	9.291495
5/12/2018 3:00	61200	11.878895	16.393753	9.296564
5/12/2018 3:15	62100	11.904888	16.393753	9.237317
5/12/2018 3:30	63000	11.924568	16.398819	9.19246
5/12/2018 3:45	63900	11.91923	16.412613	9.204629
5/12/2018 4:00	64800	11.954594	16.409714	9.124023
5/12/2018 4:15	65700	11.954601	16.40535	9.124005
5/12/2018 4:30	66600	11.972084	16.400284	9.084157
5/12/2018 4:45	67500	11.979719	16.38504	9.066754
5/12/2018 5:00	68400	12.002975	16.410446	9.013746
5/12/2018 5:15	69300	12.011482	16.393753	8.994356
5/12/2018 5:30	70200	12.017323	16.411896	8.981045
5/12/2018 5:45	71100	12.023178	16.39447	8.967698
5/12/2018 6:00	72000	12.02183	16.381409	8.970772
5/12/2018 6:15	72900	12.002111	16.401733	9.015716
5/12/2018 6:30	73800	12.001202	16.39447	9.017789
5/12/2018 6:45	74700	11.977034	16.413345	9.072876

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/12/2018 7:00	75600	11.964493	16.408981	9.10146
5/12/2018 7:15	76500	11.951029	16.406082	9.132149
5/12/2018 7:30	77400	11.937143	16.406815	9.163797
5/12/2018 7:45	78300	11.930407	16.407532	9.179153
5/12/2018 8:00	79200	11.895039	16.416962	9.259768
5/12/2018 8:15	80100	11.902634	16.409714	9.242456
5/12/2018 8:30	81000	11.894148	16.397385	9.261798
5/12/2018 8:45	81900	11.886063	16.403915	9.280227
5/12/2018 9:00	82800	11.866335	16.408264	9.325192
5/12/2018 9:15	83700	11.842613	16.42421	9.379261
5/12/2018 9:30	84600	11.847538	16.401733	9.368036
5/12/2018 9:45	85500	11.827366	16.402466	9.414015
5/12/2018 10:00	86400	11.787476	16.404633	9.504937
5/12/2018 10:15	87300	11.786596	16.396652	9.506941
5/12/2018 10:30	88200	11.773603	16.406815	9.536555
5/12/2018 10:45	89100	11.759253	16.420593	9.569265
5/12/2018 11:00	90000	11.759253	16.40535	9.569265
5/12/2018 11:15	90900	11.75119	16.418411	9.587643
5/12/2018 11:30	91800	11.748051	16.401016	9.594798
5/12/2018 11:45	92700	11.748501	16.411896	9.593772
5/12/2018 12:00	93600	11.730116	16.398819	9.635677
5/12/2018 12:15	94500	11.730566	16.403915	9.634651
5/12/2018 12:30	95400	11.752563	16.403183	9.584512
5/12/2018 12:45	96300	11.752089	16.420593	9.585595
5/12/2018 13:00	97200	11.762842	16.409714	9.561084
5/12/2018 13:15	98100	11.752548	16.421326	9.584547
5/12/2018 13:30	99000	11.768194	16.391586	9.548885
5/12/2018 13:45	99900	11.774036	16.413345	9.535569
5/12/2018 14:00	100800	11.789259	16.393753	9.500872
5/12/2018 14:15	101700	11.801809	16.399551	9.472266
5/12/2018 14:30	102600	11.799574	16.408981	9.477361
5/12/2018 14:45	103500	11.820204	16.387207	9.430339
5/12/2018 15:00	104400	11.826929	16.397385	9.41501
5/12/2018 15:15	105300	11.847956	16.393753	9.367084
5/12/2018 15:30	106200	11.871733	16.406815	9.312889
5/12/2018 15:45	107100	11.877991	16.387207	9.298625
5/12/2018 16:00	108000	11.8892	16.397385	9.273075
5/12/2018 16:15	108900	11.882029	16.391586	9.289421
5/12/2018 16:30	109800	11.895929	16.393753	9.257737
5/12/2018 16:45	110700	11.899513	16.403183	9.249568
5/12/2018 17:00	111600	11.896358	16.391586	9.256759
5/12/2018 17:15	112500	11.911144	16.393753	9.223058

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/12/2018 17:30	113400	11.907578	16.424957	9.231188
5/12/2018 17:45	114300	11.887846	16.389404	9.276161
5/12/2018 18:00	115200	11.874403	16.406082	9.306803
5/12/2018 18:15	116100	11.876646	16.408264	9.30169
5/12/2018 18:30	117000	11.878437	16.403183	9.297607
5/12/2018 18:45	117900	11.867689	16.415527	9.322105
5/12/2018 19:00	118800	11.843937	16.398819	9.376244
5/12/2018 19:15	119700	11.850214	16.399551	9.361937
5/12/2018 19:30	120600	11.835451	16.424957	9.395586
5/12/2018 19:45	121500	11.821993	16.398819	9.426261
5/12/2018 20:00	122400	11.800041	16.393021	9.476295
5/12/2018 20:15	123300	11.833651	16.417694	9.39969
5/12/2018 20:30	124200	11.809441	16.416245	9.454872
5/12/2018 20:45	125100	11.762833	16.42276	9.561106
5/12/2018 21:00	126000	11.776289	16.410446	9.530435
5/12/2018 21:15	126900	11.74942	16.423492	9.591677
5/12/2018 21:30	127800	11.779409	16.438004	9.523322
5/12/2018 21:45	128700	11.756584	16.401733	9.575348
5/12/2018 22:00	129600	11.705036	16.416962	9.692842
5/12/2018 22:15	130500	11.723845	16.419159	9.649972
5/12/2018 22:30	131400	11.692499	16.426407	9.721417
5/12/2018 22:45	132300	11.684429	16.412613	9.739811
5/12/2018 23:00	133200	11.682205	16.395203	9.744881
5/12/2018 23:15	134100	11.62886	16.416962	9.866469
5/12/2018 23:30	135000	11.61141	16.411896	9.906244
5/12/2018 23:45	135900	11.571074	16.402466	9.998184
5/13/2018 0:00	136800	11.593468	16.413345	9.947141
5/13/2018 0:15	137700	11.592144	16.393753	9.950157
5/13/2018 0:30	138600	11.607361	16.427856	9.915474
5/13/2018 0:45	139500	11.626207	16.410446	9.872517
5/13/2018 1:00	140400	11.649487	16.39592	9.819456
5/13/2018 1:15	141300	11.681307	16.406082	9.746928
5/13/2018 1:30	142200	11.70817	16.416962	9.685699
5/13/2018 1:45	143100	11.701887	16.393753	9.700019
5/13/2018 2:00	144000	11.716246	16.418411	9.667292
5/13/2018 2:15	144900	11.69519	16.390854	9.715283
5/13/2018 2:30	145800	11.738657	16.407532	9.616209
5/13/2018 2:45	146700	11.742226	16.39592	9.608075
5/13/2018 3:00	147600	11.742226	16.416962	9.608075
5/13/2018 3:15	148500	11.763273	16.407532	9.560102
5/13/2018 3:30	149400	11.785229	16.389404	9.510058
5/13/2018 3:45	150300	11.789253	16.410446	9.500885

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/13/2018 4:00	151200	11.816587	16.396652	9.438581
5/13/2018 4:15	152100	11.850634	16.40535	9.36098
5/13/2018 4:30	153000	11.860081	16.402466	9.339447
5/13/2018 4:45	153900	11.878895	16.397385	9.296564
5/13/2018 5:00	154800	11.897703	16.381409	9.253695
5/13/2018 5:15	155700	11.904436	16.402466	9.238348
5/13/2018 5:30	156600	11.895929	16.39592	9.257737
5/13/2018 5:45	157500	11.880236	16.395203	9.293508
5/13/2018 6:00	158400	11.88246	16.377777	9.288439
5/13/2018 6:15	159300	11.895929	16.401016	9.257737
5/13/2018 6:30	160200	11.880682	16.401016	9.292491
5/13/2018 6:45	161100	11.874878	16.393753	9.30572
5/13/2018 7:00	162000	11.863199	16.410446	9.332339
5/13/2018 7:15	162900	11.841248	16.426407	9.382374
5/13/2018 7:30	163800	11.885185	16.422043	9.282227
5/13/2018 7:45	164700	11.870377	16.411896	9.31598
5/13/2018 8:00	165600	11.860096	16.418411	9.339413
5/13/2018 8:15	166500	11.860975	16.395203	9.337408
5/13/2018 8:30	167400	11.818848	16.411148	9.43343
5/13/2018 8:45	168300	11.807636	16.430756	9.458984
5/13/2018 9:00	169200	11.78616	16.421326	9.507936
5/13/2018 9:15	170100	11.770487	16.420593	9.543659
5/13/2018 9:30	171000	11.760633	16.430023	9.566118
5/13/2018 9:45	171900	11.762419	16.443085	9.562049
5/13/2018 10:00	172800	11.753918	16.452515	9.581426
5/13/2018 10:15	173700	11.75304	16.469208	9.583426
5/13/2018 10:30	174600	11.726122	16.473541	9.644781
5/13/2018 10:45	175500	11.727024	16.474289	9.642724
5/13/2018 11:00	176400	11.729734	16.463394	9.636547
5/13/2018 11:15	177300	11.71763	16.459045	9.664136
5/13/2018 11:30	178200	11.699234	16.456146	9.706066
5/13/2018 11:45	179100	11.701929	16.477905	9.699924
5/13/2018 12:00	180000	11.678627	16.452515	9.753036
5/13/2018 12:15	180900	11.65892	16.468475	9.797954
5/13/2018 12:30	181800	11.672823	16.463394	9.766266
5/13/2018 12:45	182700	11.655355	16.448898	9.806079
5/13/2018 13:00	183600	11.662941	16.468475	9.78879
5/13/2018 13:15	184500	11.662941	16.459778	9.78879
5/13/2018 13:30	185400	11.675962	16.453232	9.759109
5/13/2018 13:45	186300	11.688498	16.432205	9.730538
5/13/2018 14:00	187200	11.715399	16.454697	9.669222
5/13/2018 14:15	188100	11.741381	16.435089	9.610002

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/13/2018 14:30	189000	11.761526	16.453964	9.564084
5/13/2018 14:45	189900	11.774073	16.456146	9.535486
5/13/2018 15:00	190800	11.794243	16.464111	9.489512
5/13/2018 15:15	191700	11.789301	16.451797	9.500776
5/13/2018 15:30	192600	11.795599	16.440186	9.486421
5/13/2018 15:45	193500	11.817976	16.407532	9.435417
5/13/2018 16:00	194400	11.826946	16.444534	9.414971
5/13/2018 16:15	195300	11.839058	16.438721	9.387364
5/13/2018 16:30	196200	11.857866	16.442352	9.344495
5/13/2018 16:45	197100	11.87627	16.447433	9.302547
5/13/2018 17:00	198000	11.889677	16.422043	9.271988
5/13/2018 17:15	198900	11.8906	16.456863	9.269884
5/13/2018 17:30	199800	11.924192	16.447433	9.193316
5/13/2018 17:45	200700	11.924629	16.435837	9.192322
5/13/2018 18:00	201600	11.936728	16.463394	9.164745
5/13/2018 18:15	202500	11.947037	16.427856	9.141248
5/13/2018 18:30	203400	11.94079	16.445984	9.155485
5/13/2018 18:45	204300	11.932255	16.451065	9.17494
5/13/2018 19:00	205200	11.930916	16.445984	9.177992
5/13/2018 19:15	206100	11.923283	16.435837	9.195391
5/13/2018 19:30	207000	11.913439	16.443085	9.217828
5/13/2018 19:45	207900	11.912113	16.452515	9.220849
5/13/2018 20:00	208800	11.886543	16.440186	9.279131
5/13/2018 20:15	209700	11.894182	16.453232	9.26172
5/13/2018 20:30	210600	11.881186	16.447433	9.291343
5/13/2018 20:45	211500	11.863241	16.454697	9.332244
5/13/2018 21:00	212400	11.846224	16.423492	9.371032
5/13/2018 21:15	213300	11.841305	16.445267	9.382243
5/13/2018 21:30	214200	11.826057	16.442352	9.416997
5/13/2018 21:45	215100	11.820696	16.448166	9.429217
5/13/2018 22:00	216000	11.807686	16.452515	9.458871
5/13/2018 22:15	216900	11.790216	16.435837	9.49869
5/13/2018 22:30	217800	11.788891	16.456863	9.501711
5/13/2018 22:45	218700	11.808605	16.469208	9.456776
5/13/2018 23:00	219600	11.78709	16.453964	9.505815
5/13/2018 23:15	220500	11.766474	16.482254	9.552807
5/13/2018 23:30	221400	11.747663	16.475723	9.595681
5/13/2018 23:45	222300	11.739162	16.479355	9.615057
5/14/2018 0:00	223200	11.75798	16.473541	9.572165
5/14/2018 0:15	224100	11.759762	16.476456	9.568105
5/14/2018 0:30	225000	11.746752	16.440186	9.597759
5/14/2018 0:45	225900	11.775888	16.442352	9.531347

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/14/2018 1:00	226800	11.78303	16.438004	9.515071
5/14/2018 1:15	227700	11.791098	16.453964	9.496681
5/14/2018 1:30	228600	11.816223	16.472107	9.439412
5/14/2018 1:45	229500	11.814432	16.453964	9.443495
5/14/2018 2:00	230400	11.857883	16.452515	9.344456
5/14/2018 2:15	231300	11.874943	16.451797	9.305573
5/14/2018 2:30	232200	11.908953	16.429291	9.228053
5/14/2018 2:45	233100	11.912985	16.428574	9.218863
5/14/2018 3:00	234000	11.935413	16.460495	9.167741
5/14/2018 3:15	234900	11.963627	16.448898	9.103434
5/14/2018 3:30	235800	11.988285	16.444534	9.04723
5/14/2018 3:45	236700	12.004858	16.430756	9.009455
5/14/2018 4:00	237600	12.019669	16.431473	8.975698
5/14/2018 4:15	238500	12.052786	16.456863	8.900213
5/14/2018 4:30	239400	12.072533	16.466293	8.855204
5/14/2018 4:45	240300	12.092697	16.453232	8.809242
5/14/2018 5:00	241200	12.119122	16.438721	8.749013
5/14/2018 5:15	242100	12.121407	16.442352	8.743805
5/14/2018 5:30	243000	12.123198	16.448166	8.739723
5/14/2018 5:45	243900	12.144686	16.42276	8.690744
5/14/2018 6:00	244800	12.163506	16.440186	8.647848
5/14/2018 6:15	245700	12.152308	16.444534	8.673372
5/14/2018 6:30	246600	12.156784	16.434387	8.663169
5/14/2018 6:45	247500	12.147385	16.451065	8.684593
5/14/2018 7:00	248400	12.173378	16.438004	8.625346
5/14/2018 7:15	249300	12.147387	16.458313	8.684588
5/14/2018 7:30	250200	12.147415	16.444534	8.684524
5/14/2018 7:45	251100	12.132153	16.465576	8.719312
5/14/2018 8:00	252000	12.112417	16.484421	8.764295
5/14/2018 8:15	252900	12.108379	16.470657	8.773499
5/14/2018 8:30	253800	12.092268	16.459045	8.810221
5/14/2018 8:45	254700	12.066296	16.445267	8.86942
5/14/2018 9:00	255600	12.056416	16.436554	8.891939
5/14/2018 9:15	256500	12.041185	16.476456	8.926654
5/14/2018 9:30	257400	12.021032	16.445267	8.972589
5/14/2018 9:45	258300	12.006681	16.476456	9.005299
5/14/2018 10:00	259200	11.991909	16.464111	9.03897
5/14/2018 10:15	260100	11.983387	16.459045	9.058394
5/14/2018 10:30	261000	11.974871	16.468475	9.077806
5/14/2018 10:45	261900	11.963657	16.472824	9.103364
5/14/2018 11:00	262800	11.962723	16.440903	9.105494
5/14/2018 11:15	263700	11.918365	16.462662	9.206598

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/14/2018 11:30	264600	11.884789	16.463394	9.283131
5/14/2018 11:45	265500	11.848917	16.456863	9.364893
5/14/2018 12:00	266400	11.819355	16.464844	9.432274
5/14/2018 12:15	267300	11.78174	16.465576	9.518009
5/14/2018 12:30	268200	11.756624	16.450333	9.575256
5/14/2018 12:45	269100	11.732428	16.482986	9.630408
5/14/2018 13:00	270000	11.708212	16.458313	9.685603
5/14/2018 13:15	270900	11.698809	16.467743	9.707036
5/14/2018 13:30	271800	11.688955	16.474289	9.729495
5/14/2018 13:45	272700	11.666546	16.442352	9.780573
5/14/2018 14:00	273600	11.6679	16.457596	9.777486
5/14/2018 14:15	274500	11.670574	16.468475	9.771391
5/14/2018 14:30	275400	11.67013	16.443802	9.772404
5/14/2018 14:45	276300	11.700581	16.443802	9.702997
5/14/2018 15:00	277200	11.700579	16.435837	9.703002
5/14/2018 15:15	278100	11.713144	16.441635	9.67436
5/14/2018 15:30	279000	11.730598	16.411148	9.634578
5/14/2018 15:45	279900	11.744028	16.428574	9.603967
5/14/2018 16:00	280800	11.756165	16.432922	9.576304
5/14/2018 16:15	281700	11.760618	16.427856	9.566153
5/14/2018 16:30	282600	11.771826	16.450333	9.540607
5/14/2018 16:45	283500	11.773607	16.428574	9.536547
5/14/2018 17:00	284400	11.779427	16.451065	9.523283
5/14/2018 17:15	285300	11.788406	16.416245	9.502815
5/14/2018 17:30	286200	11.800497	16.414063	9.475257
5/14/2018 17:45	287100	11.822464	16.42421	9.425187
5/14/2018 18:00	288000	11.821102	16.445984	9.428291
5/14/2018 18:15	288900	11.822449	16.425674	9.425222
5/14/2018 18:30	289800	11.816605	16.404633	9.438542
5/14/2018 18:45	290700	11.806738	16.39592	9.461032
5/14/2018 19:00	291600	11.807184	16.413345	9.460014
5/14/2018 19:15	292500	11.811691	16.435837	9.449741
5/14/2018 19:30	293400	11.800934	16.428574	9.474261
5/14/2018 19:45	294300	11.795139	16.421326	9.487469
5/14/2018 20:00	295200	11.780327	16.427124	9.521231
5/14/2018 20:15	296100	11.767771	16.432205	9.54985
5/14/2018 20:30	297000	11.743158	16.445984	9.605949
5/14/2018 20:45	297900	11.735985	16.464111	9.6223
5/14/2018 21:00	298800	11.723892	16.442352	9.649863
5/14/2018 21:15	299700	11.705971	16.472824	9.690711
5/14/2018 21:30	300600	11.69029	16.472824	9.726452
5/14/2018 21:45	301500	11.686272	16.480087	9.735612

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/14/2018 22:00	302400	11.651321	16.482254	9.815274
5/14/2018 22:15	303300	11.651772	16.468475	9.814248
5/14/2018 22:30	304200	11.619488	16.496765	9.887833
5/14/2018 22:45	305100	11.608732	16.46701	9.912348
5/14/2018 23:00	306000	11.590832	16.452515	9.953149
5/14/2018 23:15	306900	11.567074	16.465576	10.0073
5/14/2018 23:30	307800	11.577808	16.471375	9.982833
5/14/2018 23:45	308700	11.557194	16.460495	10.02982
5/15/2018 0:00	309600	11.545103	16.483704	10.057379
5/15/2018 0:15	310500	11.561251	16.467743	10.020573
5/15/2018 0:30	311400	11.545988	16.474289	10.055361
5/15/2018 0:45	312300	11.557646	16.450333	10.02879
5/15/2018 1:00	313200	11.571543	16.451797	9.997114
5/15/2018 1:15	314100	11.577808	16.455399	9.982833
5/15/2018 1:30	315000	11.593502	16.479355	9.947062
5/15/2018 1:45	315900	11.589922	16.450333	9.955222
5/15/2018 2:00	316800	11.579161	16.471375	9.979751
5/15/2018 2:15	317700	11.593496	16.452515	9.947075
5/15/2018 2:30	318600	11.585003	16.463394	9.966434
5/15/2018 2:45	319500	11.608732	16.46701	9.912348
5/15/2018 3:00	320400	11.632935	16.4496	9.857183
5/15/2018 3:15	321300	11.656244	16.454697	9.804053
5/15/2018 3:30	322200	11.686258	16.455399	9.735642
5/15/2018 3:45	323100	11.718075	16.435089	9.663122
5/15/2018 4:00	324000	11.751684	16.433655	9.586516
5/15/2018 4:15	324900	11.772285	16.451065	9.539559
5/15/2018 4:30	325800	11.802753	16.469208	9.470114
5/15/2018 4:45	326700	11.831915	16.452515	9.403646
5/15/2018 5:00	327600	11.853863	16.458313	9.35362
5/15/2018 5:15	328500	11.87134	16.457596	9.313785
5/15/2018 5:30	329400	11.895557	16.476456	9.258585
5/15/2018 5:45	330300	11.89423	16.464844	9.261611
5/15/2018 6:00	331200	11.901375	16.468475	9.245325
5/15/2018 6:15	332100	11.906752	16.466293	9.233069
5/15/2018 6:30	333000	11.929609	16.474289	9.18097
5/15/2018 6:45	333900	11.913498	16.482986	9.217693
5/15/2018 7:00	334800	11.912127	16.487335	9.220819
5/15/2018 7:15	335700	11.92063	16.477905	9.201438
5/15/2018 7:30	336600	11.925587	16.496765	9.190139
5/15/2018 7:45	337500	11.927351	16.469208	9.186117
5/15/2018 8:00	338400	11.922892	16.473541	9.196281
5/15/2018 8:15	339300	11.923792	16.473541	9.19423

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/15/2018 8:30	340200	11.904062	16.506912	9.2392
5/15/2018 8:45	341100	11.881214	16.479355	9.291278
5/15/2018 9:00	342000	11.887947	16.477173	9.275931
5/15/2018 9:15	342900	11.847164	16.4953	9.368888
5/15/2018 9:30	343800	11.84267	16.481522	9.37913
5/15/2018 9:45	344700	11.80681	16.485886	9.460867
5/15/2018 10:00	345600	11.789791	16.485153	9.499659
5/15/2018 10:15	346500	11.775932	16.492401	9.531247
5/15/2018 10:30	347400	11.762028	16.486603	9.562941
5/15/2018 10:45	348300	11.736929	16.490234	9.620148
5/15/2018 11:00	349200	11.725256	16.471375	9.646754
5/15/2018 11:15	350100	11.719444	16.494598	9.660001
5/15/2018 11:30	351000	11.707783	16.482986	9.686582
5/15/2018 11:45	351900	11.705984	16.475723	9.690681
5/15/2018 12:00	352800	11.698355	16.492401	9.708071
5/15/2018 12:15	353700	11.675961	16.472107	9.759114
5/15/2018 12:30	354600	11.667442	16.468475	9.778529
5/15/2018 12:45	355500	11.649523	16.489502	9.819374
5/15/2018 13:00	356400	11.641436	16.475006	9.837807
5/15/2018 13:15	357300	11.631145	16.461945	9.861261
5/15/2018 13:30	358200	11.608738	16.459778	9.912335
5/15/2018 13:45	359100	11.596628	16.480087	9.939937
5/15/2018 14:00	360000	11.57691	16.447433	9.98488
5/15/2018 14:15	360900	11.596169	16.447433	9.940985
5/15/2018 14:30	361800	11.580938	16.457596	9.975698
5/15/2018 14:45	362700	11.578691	16.457596	9.98082
5/15/2018 15:00	363600	11.592146	16.435837	9.950153
5/15/2018 15:15	364500	11.60199	16.438004	9.927716
5/15/2018 15:30	365400	11.605125	16.448898	9.920569
5/15/2018 15:45	366300	11.630232	16.429291	9.863344
5/15/2018 16:00	367200	11.633362	16.473541	9.85621
5/15/2018 16:15	368100	11.655319	16.430023	9.806162
5/15/2018 16:30	369000	11.668314	16.418411	9.776543
5/15/2018 16:45	369900	11.682209	16.441635	9.744872
5/15/2018 17:00	370800	11.693398	16.411148	9.71937
5/15/2018 17:15	371700	11.714449	16.441635	9.671387
5/15/2018 17:30	372600	11.735092	16.42276	9.624334
5/15/2018 17:45	373500	11.751635	16.410446	9.58663
5/15/2018 18:00	374400	11.76288	16.445267	9.560997
5/15/2018 18:15	375300	11.771372	16.423492	9.541642
5/15/2018 18:30	376200	11.795122	16.413345	9.487508
5/15/2018 18:45	377100	11.788393	16.434387	9.502846

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/15/2018 19:00	378000	11.806747	16.416245	9.46101
5/15/2018 19:15	378900	11.804949	16.407532	9.46511
5/15/2018 19:30	379800	11.801826	16.435837	9.472227
5/15/2018 19:45	380700	11.812603	16.445267	9.447663
5/15/2018 20:00	381600	11.789738	16.442352	9.499781
5/15/2018 20:15	382500	11.793772	16.450333	9.490586
5/15/2018 20:30	383400	11.812603	16.436554	9.447663
5/15/2018 20:45	384300	11.84712	16.461945	9.368988
5/15/2018 21:00	385200	11.826136	16.532303	9.416819
5/15/2018 21:15	386100	11.823952	16.543182	9.421797
5/15/2018 21:30	387000	11.838306	16.570023	9.389077
5/15/2018 21:45	387900	11.790785	16.574371	9.497394
5/15/2018 22:00	388800	11.760281	16.523605	9.566922
5/15/2018 22:15	389700	11.719952	16.539551	9.658845
5/15/2018 22:30	390600	11.679588	16.508362	9.750845
5/15/2018 22:45	391500	11.637449	16.493134	9.846893
5/15/2018 23:00	392400	11.608763	16.518524	9.912278
5/15/2018 23:15	393300	11.606539	16.494598	9.917348
5/15/2018 23:30	394200	11.578732	16.500397	9.980729
5/15/2018 23:45	395100	11.563967	16.492401	10.014382
5/16/2018 0:00	396000	11.576488	16.512726	9.985842
5/16/2018 0:15	396900	11.569338	16.509811	10.00214
5/16/2018 0:30	397800	11.566624	16.496765	10.008327
5/16/2018 0:45	398700	11.564856	16.506195	10.012357
5/16/2018 1:00	399600	11.561262	16.502563	10.020547
5/16/2018 1:15	400500	11.558117	16.517075	10.027716
5/16/2018 1:30	401400	11.540636	16.479355	10.06756
5/16/2018 1:45	402300	11.519571	16.477173	10.115573
5/16/2018 2:00	403200	11.514193	16.505478	10.127833
5/16/2018 2:15	404100	11.5124	16.507645	10.13192
5/16/2018 2:30	405000	11.496264	16.493134	10.168699
5/16/2018 2:45	405900	11.5021	16.508362	10.155396
5/16/2018 3:00	406800	11.511951	16.4888	10.132941
5/16/2018 3:15	407700	11.541967	16.478622	10.064526
5/16/2018 3:30	408600	11.585875	16.503296	9.964448
5/16/2018 3:45	409500	11.602022	16.473541	9.927642
5/16/2018 4:00	410400	11.604265	16.476456	9.92253
5/16/2018 4:15	411300	11.647293	16.476456	9.824456
5/16/2018 4:30	412200	11.667007	16.4953	9.779521
5/16/2018 4:45	413100	11.691204	16.484421	9.724369
5/16/2018 5:00	414000	11.715866	16.477173	9.668157
5/16/2018 5:15	414900	11.732897	16.490234	9.629338

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/16/2018 5:30	415800	11.740517	16.46701	9.611971
5/16/2018 5:45	416700	11.762028	16.480087	9.562941
5/16/2018 6:00	417600	11.776819	16.480087	9.529226
5/16/2018 6:15	418500	11.814455	16.501099	9.443442
5/16/2018 6:30	419400	11.835983	16.490234	9.394373
5/16/2018 6:45	420300	11.847151	16.4953	9.368918
5/16/2018 7:00	421200	11.859278	16.472107	9.341277
5/16/2018 7:15	422100	11.878094	16.4888	9.29839
5/16/2018 7:30	423000	11.886147	16.498215	9.280035
5/16/2018 7:45	423900	11.880793	16.482254	9.292238
5/16/2018 8:00	424800	11.886148	16.486603	9.280031
5/16/2018 8:15	425700	11.890659	16.490234	9.269749
5/16/2018 8:30	426600	11.913504	16.4953	9.21768
5/16/2018 8:45	427500	11.935444	16.490967	9.167671
5/16/2018 9:00	428400	11.949778	16.483704	9.135
5/16/2018 9:15	429300	11.959196	16.485886	9.113533
5/16/2018 9:30	430200	11.969961	16.510544	9.088996
5/16/2018 9:45	431100	11.964151	16.486603	9.102238
5/16/2018 10:00	432000	11.949356	16.491684	9.135962
5/16/2018 10:15	432900	11.954262	16.504013	9.12478
5/16/2018 10:30	433800	11.94487	16.517792	9.146187
5/16/2018 10:45	434700	11.926498	16.506195	9.188061
5/16/2018 11:00	435600	11.924709	16.504745	9.192139
5/16/2018 11:15	436500	11.923803	16.510544	9.194203
5/16/2018 11:30	437400	11.901409	16.497498	9.245247
5/16/2018 11:45	438300	11.887526	16.490234	9.276892
5/16/2018 12:00	439200	11.876347	16.499664	9.302372
5/16/2018 12:15	440100	11.870504	16.4953	9.315688
5/16/2018 12:30	441000	11.832396	16.522156	9.402551
5/16/2018 12:45	441900	11.835102	16.506195	9.396381
5/16/2018 13:00	442800	11.827925	16.501099	9.412741
5/16/2018 13:15	443700	11.807749	16.523605	9.458728
5/16/2018 13:30	444600	11.804632	16.51561	9.465832
5/16/2018 13:45	445500	11.788504	16.537369	9.502593
5/16/2018 14:00	446400	11.738726	16.519974	9.616053
5/16/2018 14:15	447300	11.698399	16.532303	9.707971
5/16/2018 14:30	448200	11.663006	16.530853	9.788642
5/16/2018 14:45	449100	11.634764	16.532303	9.853014
5/16/2018 15:00	450000	11.617733	16.523605	9.891832
5/16/2018 15:15	450900	11.586376	16.525772	9.963305
5/16/2018 15:30	451800	11.592649	16.524323	9.949005
5/16/2018 15:45	452700	11.56978	16.520691	10.001131

MW-67A				
Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/16/2018 16:00	453600	11.580084	16.537369	9.977647
5/16/2018 16:15	454500	11.585472	16.520691	9.965365
5/16/2018 16:30	455400	11.599821	16.516357	9.932659
5/16/2018 16:45	456300	11.621765	16.535202	9.882642
5/16/2018 17:00	457200	11.637911	16.516357	9.84584
5/16/2018 17:15	458100	11.656305	16.543182	9.803914
5/16/2018 17:30	459000	11.676916	16.53157	9.756936
5/16/2018 17:45	459900	11.688997	16.506195	9.7294
5/16/2018 18:00	460800	11.693926	16.510544	9.718165
5/16/2018 18:15	461700	11.706022	16.514893	9.690594
5/16/2018 18:30	462600	11.704214	16.51561	9.694715
5/16/2018 18:45	463500	11.717228	16.517075	9.665052
5/16/2018 19:00	464400	11.715475	16.516357	9.669048
5/16/2018 19:15	465300	11.726665	16.500397	9.643541
5/16/2018 19:30	466200	11.730669	16.511276	9.634417
5/16/2018 19:45	467100	11.730688	16.516357	9.634373
5/16/2018 20:00	468000	11.759378	16.514175	9.568979
5/16/2018 20:15	468900	11.763426	16.522873	9.559753
5/16/2018 20:30	469800	11.756695	16.545364	9.575096
5/16/2018 20:45	470700	11.759823	16.553329	9.567966
5/16/2018 21:00	471600	11.737431	16.536652	9.619005
5/16/2018 21:15	472500	11.74773	16.509094	9.595529
5/16/2018 21:30	473400	11.718143	16.541	9.662966
5/16/2018 21:45	474300	11.713224	16.509094	9.674178
5/16/2018 22:00	475200	11.708282	16.530853	9.685442
5/16/2018 22:15	476100	11.675125	16.541733	9.761018
5/16/2018 22:30	477000	11.68989	16.528671	9.727365
5/16/2018 22:45	477900	11.664385	16.559128	9.785499
5/16/2018 23:00	478800	11.671572	16.594681	9.769117
5/16/2018 23:15	479700	11.66123	16.560593	9.792689
5/16/2018 23:30	480600	11.649134	16.533035	9.820261
5/16/2018 23:45	481500	11.632998	16.525055	9.85704
5/17/2018 0:00	482400	11.61953	16.514893	9.887737
5/17/2018 0:15	483300	11.598909	16.524323	9.934737
5/17/2018 0:30	484200	11.565306	16.520691	10.011331
5/17/2018 0:45	485100	11.530346	16.51561	10.091015
5/17/2018 1:00	486000	11.55184	16.532303	10.042024
5/17/2018 1:15	486900	11.550524	16.527237	10.045023
5/17/2018 1:30	487800	11.535288	16.539551	10.07975
5/17/2018 1:45	488700	11.537521	16.527237	10.074659
5/17/2018 2:00	489600	11.539753	16.524323	10.069573
5/17/2018 2:15	490500	11.524961	16.524323	10.103288

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/17/2018 2:30	491400	11.53706	16.504745	10.075711
5/17/2018 2:45	492300	11.53573	16.516357	10.078742
5/17/2018 3:00	493200	11.532595	16.53157	10.085889
5/17/2018 3:15	494100	11.553202	16.506195	10.038919
5/17/2018 3:30	495000	11.56259	16.519974	10.017521
5/17/2018 3:45	495900	11.578279	16.506912	9.981759
5/17/2018 4:00	496800	11.606079	16.499664	9.918395
5/17/2018 4:15	497700	11.633869	16.510544	9.855053
5/17/2018 4:30	498600	11.661188	16.502563	9.792785
5/17/2018 4:45	499500	11.683575	16.511978	9.741759
5/17/2018 5:00	500400	11.716764	16.4953	9.666109
5/17/2018 5:15	501300	11.738281	16.477905	9.617065
5/17/2018 5:30	502200	11.770079	16.503296	9.54459
5/17/2018 5:45	503100	11.796532	16.497498	9.484295
5/17/2018 6:00	504000	11.827438	16.484421	9.413849
5/17/2018 6:15	504900	11.801901	16.485153	9.472057
5/17/2018 6:30	505800	11.835508	16.477905	9.395455
5/17/2018 6:45	506700	11.841358	16.496048	9.382122
5/17/2018 7:00	507600	11.865112	16.483704	9.327979
5/17/2018 7:15	508500	11.890659	16.51561	9.269749
5/17/2018 7:30	509400	11.896044	16.4888	9.257477
5/17/2018 7:45	510300	11.916679	16.520691	9.210442
5/17/2018 8:00	511200	11.92024	16.493851	9.202325
5/17/2018 8:15	512100	11.938654	16.530136	9.160355
5/17/2018 8:30	513000	11.942663	16.506195	9.151217
5/17/2018 8:45	513900	11.954769	16.508362	9.123623
5/17/2018 9:00	514800	11.944445	16.4888	9.147156
5/17/2018 9:15	515700	11.938627	16.496048	9.160416
5/17/2018 9:30	516600	11.92425	16.506912	9.193187
5/17/2018 9:45	517500	11.907211	16.489502	9.232022
5/17/2018 10:00	518400	11.904572	16.513443	9.238039
5/17/2018 10:15	519300	11.886179	16.483704	9.279962
5/17/2018 10:30	520200	11.873629	16.499664	9.308567
5/17/2018 10:45	521100	11.86603	16.533752	9.325888
5/17/2018 11:00	522000	11.83736	16.504745	9.391233
5/17/2018 11:15	522900	11.823011	16.517792	9.42394
5/17/2018 11:30	523800	11.818073	16.505478	9.435195
5/17/2018 11:45	524700	11.803738	16.532303	9.467871
5/17/2018 12:00	525600	11.775049	16.523605	9.53326
5/17/2018 12:15	526500	11.766079	16.525055	9.553706
5/17/2018 12:30	527400	11.746374	16.535934	9.598619
5/17/2018 12:45	528300	11.735172	16.504013	9.624152

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/17/2018 13:00	529200	11.730215	16.510544	9.635451
5/17/2018 13:15	530100	11.708735	16.523605	9.684412
5/17/2018 13:30	531000	11.688114	16.516357	9.731412
5/17/2018 13:45	531900	11.675114	16.517075	9.761045
5/17/2018 14:00	532800	11.648214	16.514893	9.822356
5/17/2018 14:15	533700	11.636126	16.4953	9.84991
5/17/2018 14:30	534600	11.636129	16.517792	9.849901
5/17/2018 14:45	535500	11.608778	16.520691	9.912244
5/17/2018 15:00	536400	11.592649	16.526489	9.949005
5/17/2018 15:15	537300	11.590858	16.526489	9.953088
5/17/2018 15:30	538200	11.580526	16.525055	9.976638
5/17/2018 15:45	539100	11.565758	16.522156	10.0103
5/17/2018 16:00	540000	11.57023	16.530136	10.000105
5/17/2018 16:15	540900	11.572039	16.522156	9.995984
5/17/2018 16:30	541800	11.568441	16.507645	10.004183
5/17/2018 16:45	542700	11.582769	16.511276	9.971525
5/17/2018 17:00	543600	11.575609	16.506195	9.987845
5/17/2018 17:15	544500	11.589968	16.529404	9.955118
5/17/2018 17:30	545400	11.595785	16.509094	9.941858
5/17/2018 17:45	546300	11.607418	16.496765	9.915343
5/17/2018 18:00	547200	11.650919	16.487335	9.816192
5/17/2018 18:15	548100	11.646414	16.494598	9.82646
5/17/2018 18:30	549000	11.682718	16.509094	9.743711
5/17/2018 18:45	549900	11.698851	16.508362	9.706941
5/17/2018 19:00	550800	11.722172	16.507645	9.653784
5/17/2018 19:15	551700	11.740532	16.520691	9.611936
5/17/2018 19:30	552600	11.748602	16.533752	9.593542
5/17/2018 19:45	553500	11.767424	16.528671	9.550641
5/17/2018 20:00	554400	11.793436	16.521439	9.491351
5/17/2018 20:15	555300	11.788021	16.506195	9.503694
5/17/2018 20:30	556200	11.793409	16.521439	9.491412
5/17/2018 20:45	557100	11.81988	16.525055	9.431078
5/17/2018 21:00	558000	11.815832	16.519974	9.440304
5/17/2018 21:15	558900	11.814043	16.526489	9.444382
5/17/2018 21:30	559800	11.810013	16.51561	9.453568
5/17/2018 21:45	560700	11.815395	16.498932	9.441299
5/17/2018 22:00	561600	11.794783	16.509094	9.488282
5/17/2018 22:15	562500	11.794804	16.539551	9.488234
5/17/2018 22:30	563400	11.777739	16.541733	9.52713
5/17/2018 22:45	564300	11.761171	16.502563	9.564892
5/17/2018 23:00	565200	11.757133	16.516357	9.574096
5/17/2018 23:15	566100	11.744577	16.544632	9.602715

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Date and Time	Elapsed Time Milliseconds	Sensor: Pres(G) 231ft SN#: 552374 Pressure (PSI)	Sensor: Pres(G) 231ft SN#: 552374 Temperature (C)	Sensor: Pres(G) 231ft SN#: 552374 Level Depth To Water (ft)
5/17/2018 23:30	567000	11.7316	16.529404	9.632295
5/17/2018 23:45	567900	11.719488	16.537369	9.659901
5/18/2018 0:00	568800	11.714548	16.504013	9.671161
5/18/2018 0:15	569700	11.684982	16.527237	9.73855
5/18/2018 0:30	570600	11.684525	16.518524	9.739594
5/18/2018 0:45	571500	11.655388	16.538834	9.806005
5/18/2018 1:00	572400	11.653618	16.536652	9.81004
5/18/2018 1:15	573300	11.635237	16.560593	9.851936
5/18/2018 1:30	574200	11.631207	16.537369	9.861122
5/18/2018 1:45	575100	11.611481	16.530853	9.906083
5/18/2018 2:00	576000	11.610151	16.543182	9.909114
5/18/2018 2:15	576900	11.605202	16.54245	9.920395
5/18/2018 2:30	577800	11.605654	16.536652	9.919365
5/18/2018 2:45	578700	11.596233	16.533035	9.940837
5/18/2018 3:00	579600	11.603857	16.533752	9.92346
5/18/2018 3:15	580500	11.591751	16.546082	9.951054
5/18/2018 3:30	581400	11.597597	16.523605	9.937728
5/18/2018 3:45	582300	11.604757	16.541	9.921408
5/18/2018 4:00	583200	11.624466	16.525772	9.876486
5/18/2018 4:15	584100	11.626717	16.511978	9.871356
5/18/2018 4:30	585000	11.644629	16.523605	9.830529
5/18/2018 4:45	585900	11.648232	16.53157	9.822317
5/18/2018 5:00	586800	11.671984	16.534485	9.768178
5/18/2018 5:15	587700	11.697521	16.524323	9.70997
5/18/2018 5:30	588600	11.723957	16.527237	9.649715
5/18/2018 5:45	589500	11.75399	16.530853	9.581261
5/18/2018 6:00	590400	11.777735	16.500397	9.527139
5/18/2018 6:15	591300	11.798807	16.508362	9.479109
5/18/2018 6:30	592200	11.830633	16.508362	9.406568
5/18/2018 6:45	593100	11.847193	16.512726	9.368823
5/18/2018 7:00	594000	11.884403	16.517075	9.284009
5/18/2018 7:15	594900	11.902349	16.517792	9.243104
5/18/2018 7:30	595800	11.93819	16.520691	9.161411
5/18/2018 7:45	596700	11.99596	16.504013	9.029736
5/18/2018 8:00	597600	12.036776	16.505478	8.936706

APPENDIX I

AS-BUILT GROUND WATER CONVEYANCE SYSTEM DRAWINGS

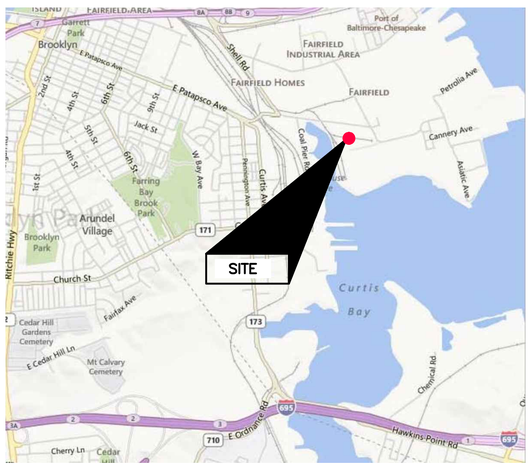
GROUNDWATER CONVEYANCE MODIFICATION
1701 EAST PATAPSCO AVENUE
BALTIMORE, MARYLAND

Prepared For:

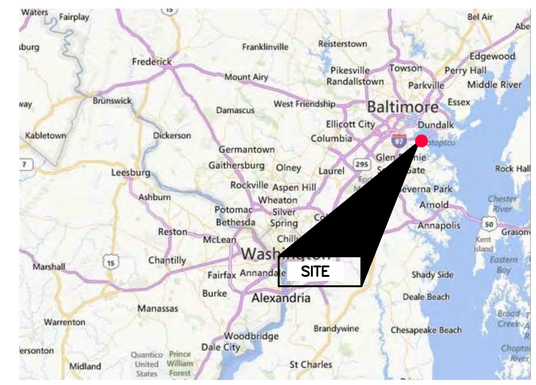
FMC

DRAWING INDEX

DRAWING	REV	TITLE
GENERAL		
450711-G-001	B	TITLE SHEET AND DRAWING INDEX
CIVIL		
450711-C-001	C	CIVIL RECOVERY WELL LOCATION PLAN
PROCESS MECHANICAL		
450711-DP-001	C	PIPING RECOVERY WELL PUMP PLAN
450711-DP-002	C	PIPING CURTIS BAY RECOVERY WELL PIPING PLAN
450711-DP-003	C	PIPING STONEHOUSE COVE RECOVERY WELL PIPING PLAN
450711-DP-004	C	PIPING CURTIS BAY RECOVERY WELL PIPING PARTIAL PLANS
450711-DP-005	C	PIPING STONEHOUSE COVE RECOVERY WELL PIPING PARTIAL PLANS
450711-DP-006	C	PIPING RECOVERY WELL DETAILS
450711-DP-007	C	PIPING RECOVERY WELL DETAILS



SITE LOCATION MAP
NOT TO SCALE



BALTIMORE, MD VICINITY MAP
NOT TO SCALE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN ANNOTATED TO REFLECT MAJOR CHANGES, IF ANY, WHICH HAVE OCCURRED DURING CONSTRUCTION. THESE DRAWINGS HAVE BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS WHO ARE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED, TO THE BEST OF OUR KNOWLEDGE, INFORMATION, AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

PER: JDF DATE: 7/11/18

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
B	RECORD DRAWING	7/11/18	JHG	JTS	JDF
A	ISSUED FOR DESIGN	1/3/18	JTS	ADM	JDF

DRAWN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT MGR.	DATE

SEAL

PARSONS

OFFICE
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 450711
WBS 01000

PROJECT TITLE
FMC
GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE
TITLE SHEET AND DRAWING INDEX

SCALE NO SCALE

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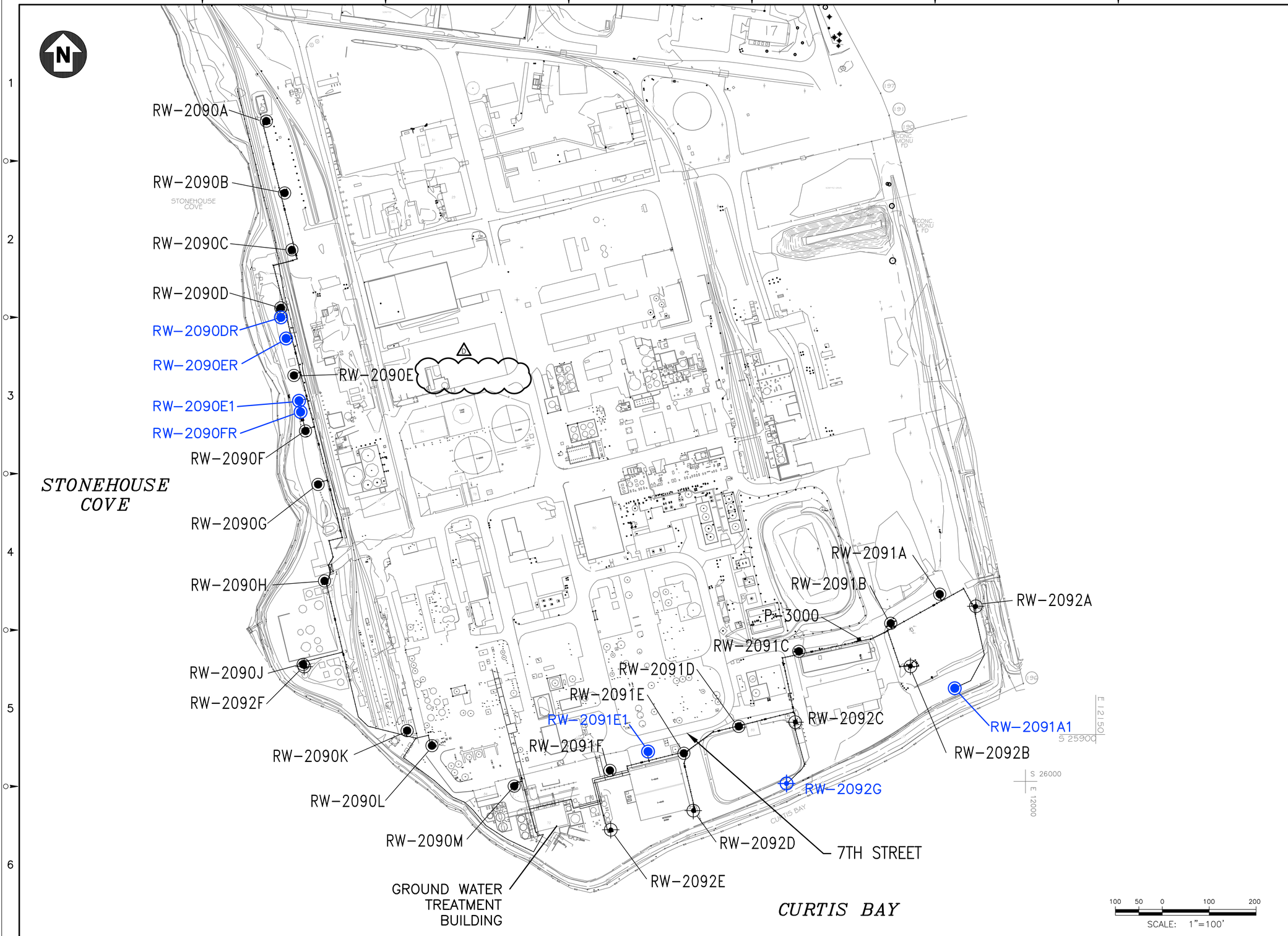

NOTES:

1. SITE PLAN SURVEY CONTROL IS BASED ON "BALTIMORE CITY SURVEY CONTROL SYSTEM".
2. NEW RECOVERY WELL LOCATIONS WERE FIELD MEASURED AND MAY NOT CORRESPOND EXACTLY WITH THE NORTH AND EAST COORDINATES OF THIS DRAWING.
3. FOR NEW RECOVERY WELL SURVEYED LOCATIONS; SEE ERM'S "FMC MONITORING WELL LOCATIONS 10/05/17" TABLE. NORTH AND EAST COORDINATES ARE PROVIDED BUT ARE NOT BASED ON THE SAME COORDINATE CONTROL SYSTEM USED IN THIS DRAWING.

LEGEND

- NEW SHALLOW RECOVERY WELL
- NEW INTERMEDIATE RECOVERY WELL
- SHALLOW RECOVERY WELL
- INTERMEDIATE RECOVERY WELL

RECORD DRAWING

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NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
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A	ISSUED FOR BID	11/15/17	JTS	ADM	JDF

DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
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301 PLAINFIELD ROAD
SYRACUSE, NY 13212
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GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE
CIVIL
RECOVERY WELL LOCATION PLAN

SCALE AS SHOWN

DRAWING NO. 450711-C-001 REV. D

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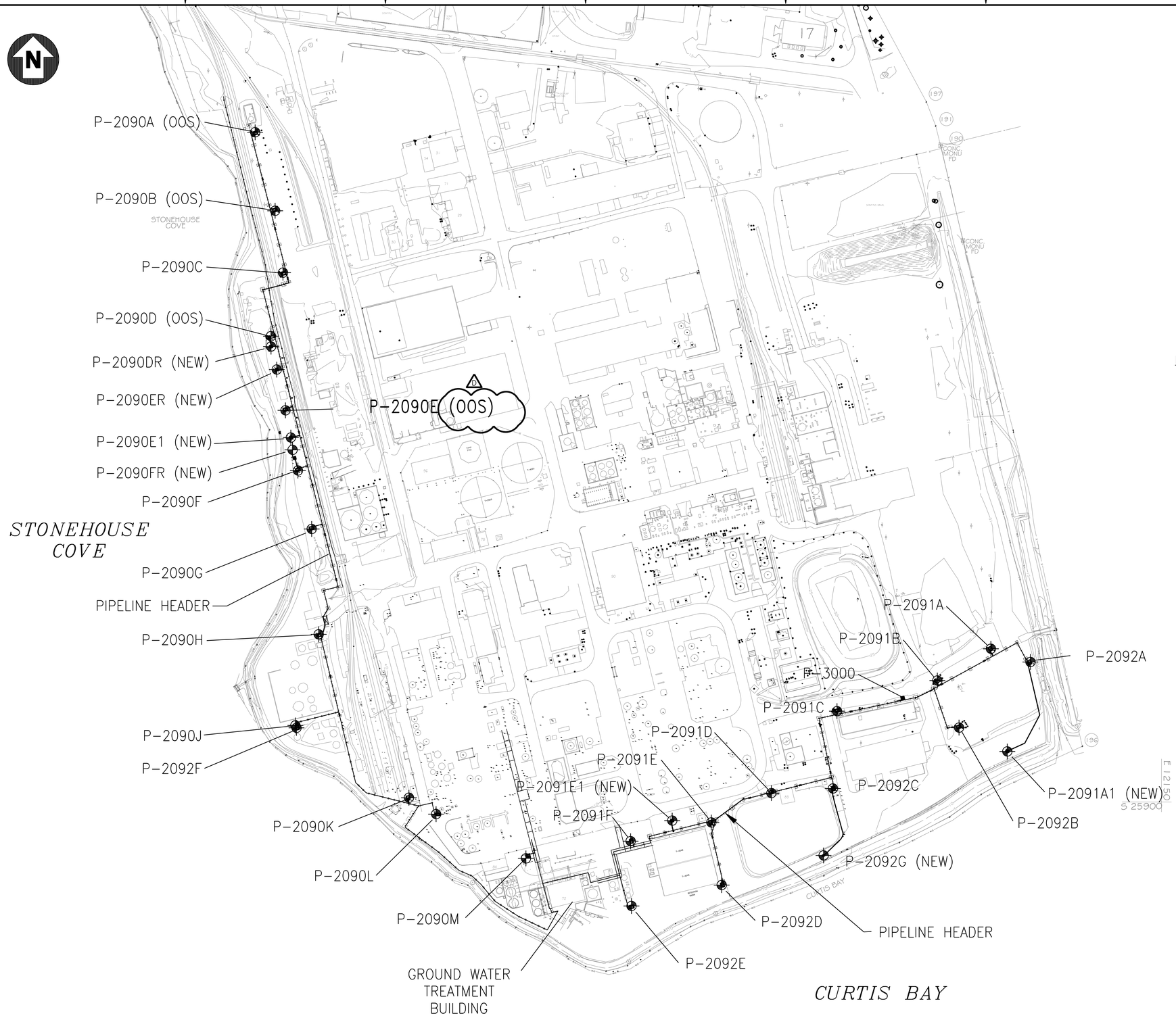

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BOP	BOTTOM OF PIPE
CL OR ℄	CENTERLINE ELEVATION
EL	ELEVATION
FF	FINISHED FLOOR
OOS	OUT OF SERVICE
TOS	TOP OF STEEL
TYP	TYPICAL

PIPING MATERIAL ABBREVIATIONS

C1	CARBON STEEL PIPE
FRP	FIBERGLASS REINFORCED PLASTIC PIPE
PE	POLYETHYLENE PIPE
PP	POLYPROPYLENE PIPE
PVC	POLYVINYL CHLORIDE PIPE
SS	STAINLESS STEEL PIPE

PIPE SERVICE DESIGNATION

CW	CITY WATER
EF	EFFLUENT
GS	GAS SUPPLY
GW	GROUNDWATER
LE	LEACHATE
SW	STORMWATER
VT	VENT
WW	WASTEWATER

LEGEND

RECOVERY WELL PUMP

POC — POINT OF CONNECTION BETWEEN NEW AND EXISTING MATERIALS

GENERAL NOTES:

1. SEE PROJECT P&ID DRAWINGS FOR ALL PIPELINE SIZES AND COMPONENTS. INSTALLER SHALL COORDINATE INSTALLATION OF COMPONENTS SHOWN ON THESE PLANS WITH THE P&ID'S PRIOR TO FABRICATION AND INSTALLATION OF EQUIPMENT OR PIPING.
2. PIPELINE LINE NUMBERS ARE PROVIDED ON THE PIPING PLANS, DETAILS, AND P&IDs TO IDENTIFY PIPELINE SIZE, SERVICE, AND MATERIAL.
3. ALL DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATION.
4. ALL OUTDOOR PIPING WILL BE ELECTRICALLY HEAT TRACED AND INSULATED. INSULATION WILL BE 1 ½" THICK FIBERGLASS, ASTM C795, PREFORMED OR FIELD FABRICATED FROM MITERED TUBES. ALUMINUM JACKETING WITH FACTORY APPLIED MOISTURE BARRIER ON THE INSIDE WILL BE USED TO JACKET ALL INSULATED PIPELINES. SEE ELECTRICAL DRAWINGS FOR HEAT TRACING.
5. MATERIALS OF CONSTRUCTION WILL BE SCHEDULE 80 PVC FOR PIPING AND FITTINGS AT WELLHEADS AND WELL PUMP PIPING; VALVES WILL BE PVC TRUE UNION TYPE. TRANSITIONS TO FRP HEADER SYSTEM SHOULD BE MADE WITH 150 LB FLANGES. FRP SADDLES OR TEE FITTING WILL BE REQUIRED AT TIE-IN LOCATIONS.
6. PVC PIPELINE PIPE SUPPORTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. MAXIMUM SPANS BETWEEN SUPPORT POINTS FOR 1" PVC SCH 80 PIPING SHALE BE 5 FEET, OR CONTINUOUSLY SUPPORTED ALONG THE LENGTH OF THE PIPELINE. PIPE SUPPORTS WILL BE INSTALLED WITHIN 2' OF ALL PIPELINE CHANGES IN DIRECTION.
7. SEE ELECTRICAL DRAWINGS FOR FINAL PLANS RELATED TO THEIR DESIGN COMPONENTS.

RECORD DRAWING

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DRAWN BY	DATE	SEAL
CHECKED BY	DATE	
APPROVED BY	DATE	
PROJECT MGR.	DATE	

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OFFICE
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 450711
WBS 01000

PROJECT TITLE
FMC
GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE
PIPING
RECOVERY WELL PUMP PLAN

SCALE: AS SHOWN

DRAWING NO. 450711-DP-001 REV. D

100 50 0 100 200
SCALE: 1"=100'

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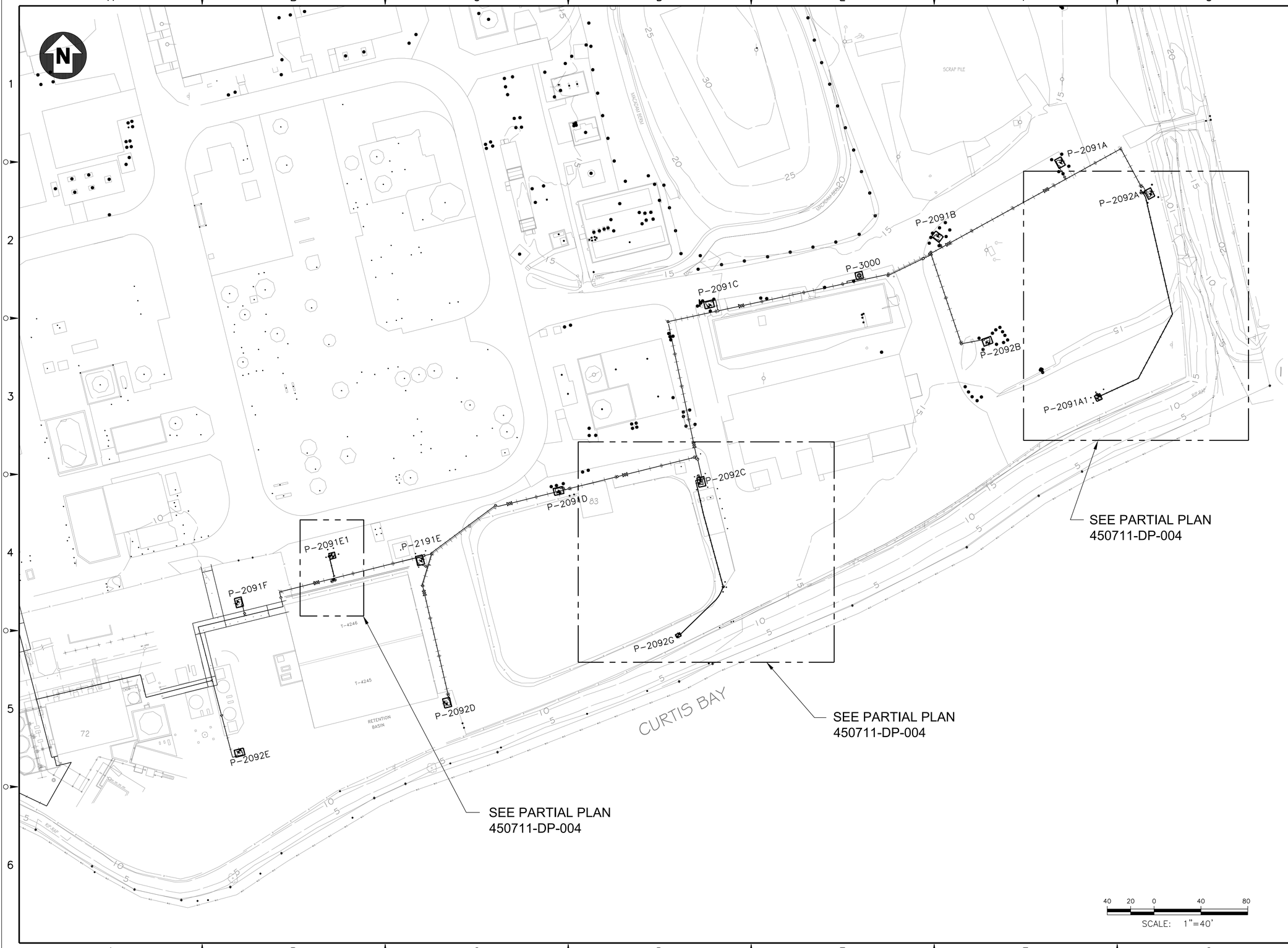

NOTES:

1. SEE DRAWING 450711-DP-001 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.

LEGEND

RECOVERY WELL / PUMP LOCATION

RECORD DRAWING

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CHECKED BY	DATE
APPROVED BY	DATE
PROJECT MGR.	DATE

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SYRACUSE, NY 13212
(315) 451-9560

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WBS 01000

PROJECT TITLE

FMC

GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE

PIPING
CURTIS BAY
RECOVERY WELL PIPING PLAN

SCALE AS SHOWN

DRAWING NO. 450711-DP-002

REV. C

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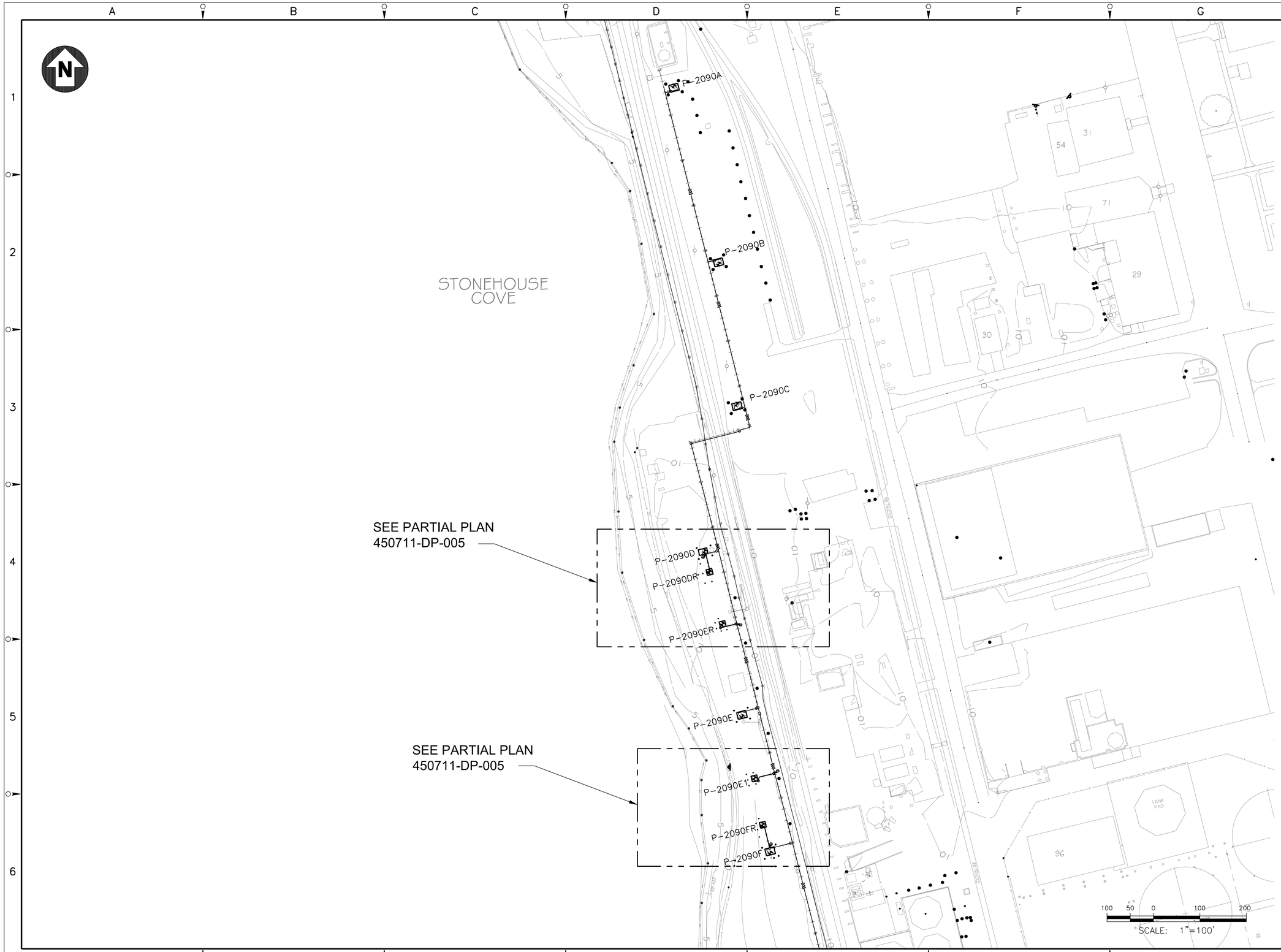

NOTES:

1. SEE DRAWING 450711-DP-001 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.

LEGEND

RECOVERY WELL / PUMP LOCATION

POC POINT OF CONNECTION BETWEEN NEW AND EXISTING MATERIALS

RECORD DRAWING

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A	ISSUED FOR BID	11/15/17	JTS	ADM	JDF

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CHECKED BY	DATE
APPROVED BY	DATE
PROJECT MGR.	DATE

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PROJECT TITLE

FMC

GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE

PIPING
STONEHOUSE COVE
RECOVERY WELL PIPING PLAN

SCALE AS SHOWN

DRAWING NO. 450711-DP-003

REV. C

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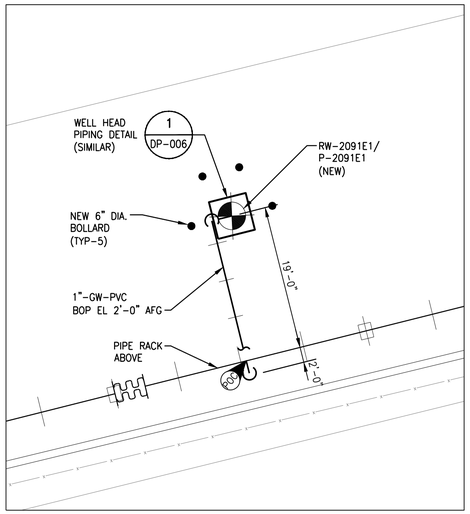
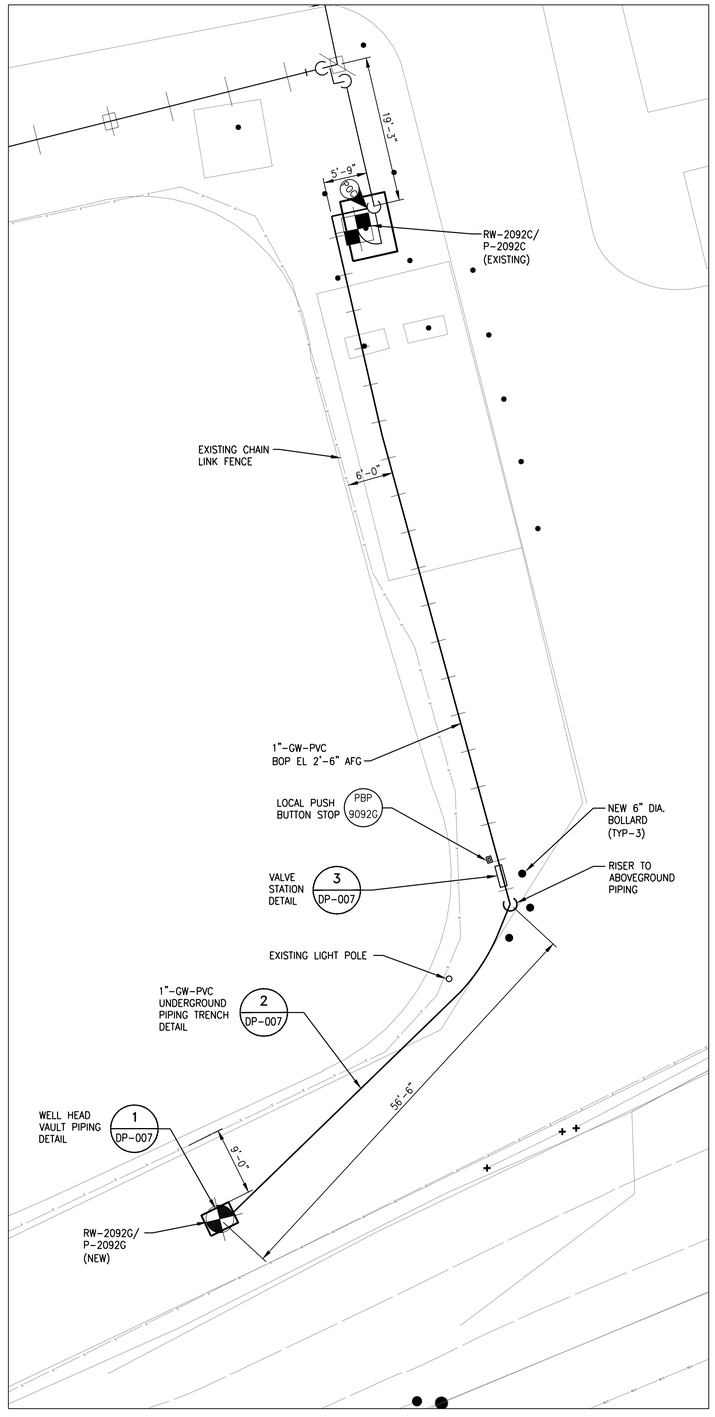


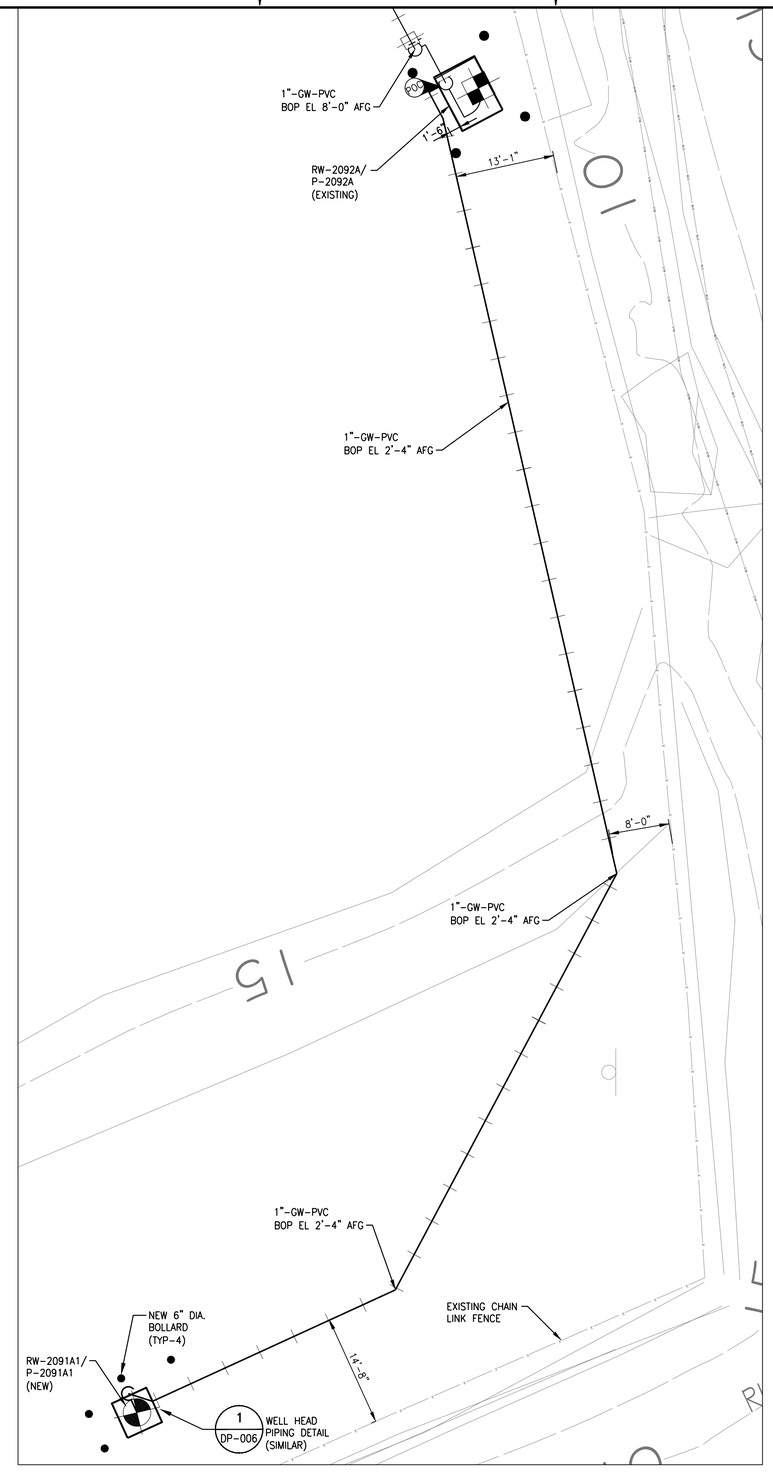
RW-2091E1 PIPING PARTIAL PLAN

SCALE: 1"=10'



RW-2092G PIPING PARTIAL PLAN

SCALE: 1"=10'



RW-2091A1 PIPING PARTIAL PLAN

SCALE: 1"=10'

10 5 0 10 20

SCALE: 1"=10'

NOTES:

1. SEE DRAWING 450711-DP-001 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.

LEGEND

RECOVERY WELL / PUMP LOCATION

POC POINT OF CONNECTION BETWEEN NEW AND EXISTING MATERIALS

RECORD DRAWING

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A	ISSUED FOR BID	11/15/17	JTS	ADM	JDF

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SYRACUSE, NY 13212
(315) 451-9560

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WBS 01000

PROJECT TITLE

FMC

GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE

PIPING
CURTIS BAY RECOVERY
WELL PIPING PARTIAL PLANS

SCALE AS SHOWN

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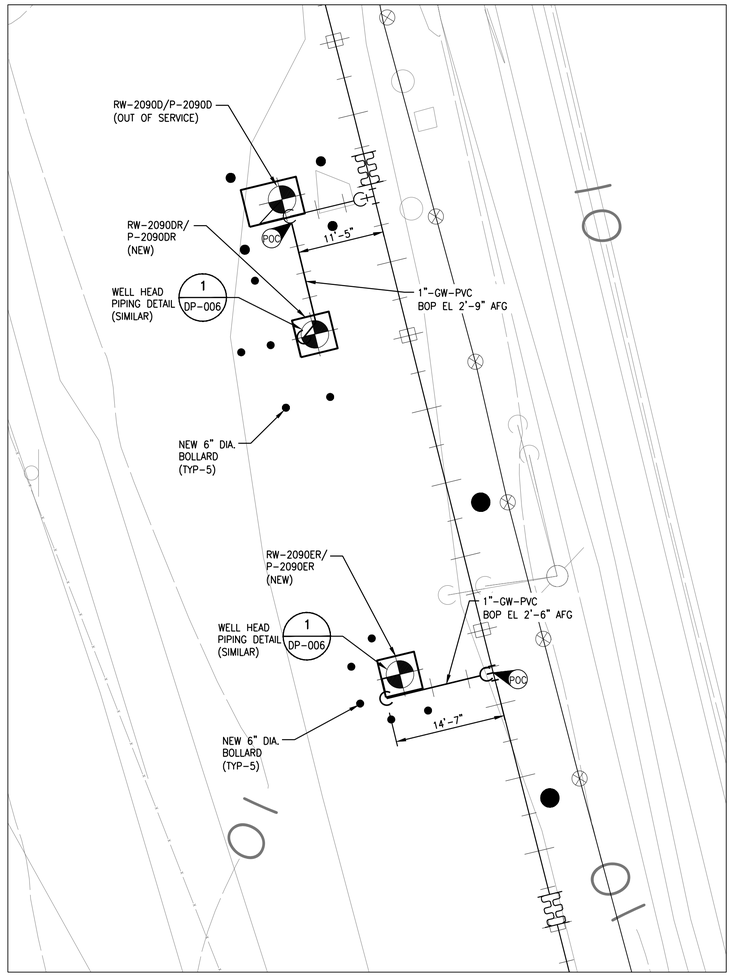
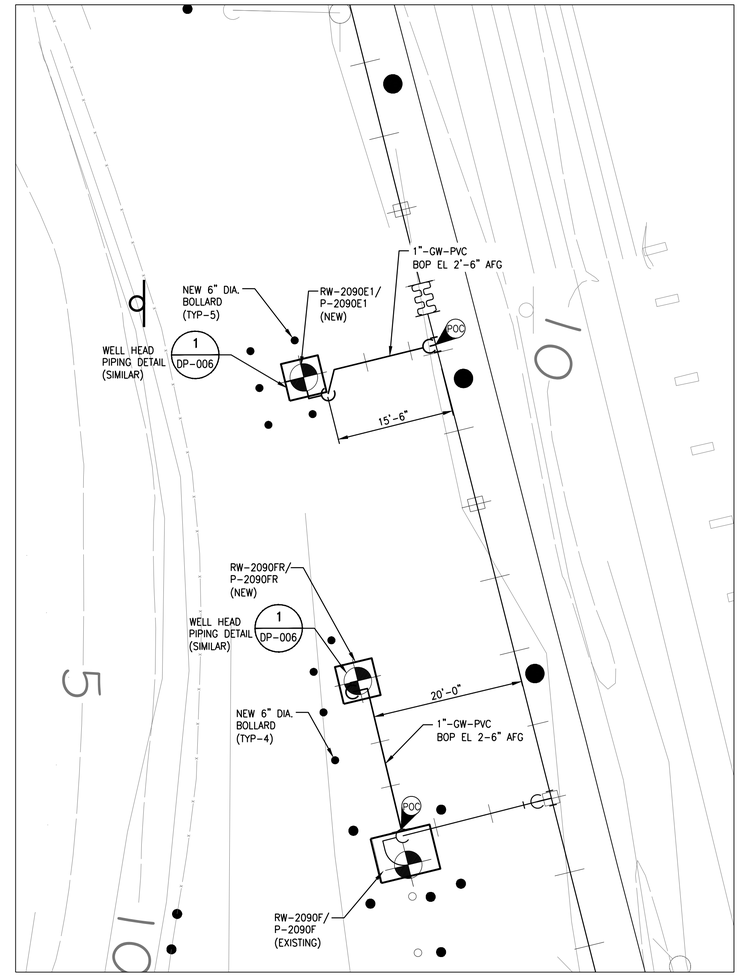


RW-2090DR AND RW-2090ER PIPING PARTIAL PLAN

SCALE: 1"=10'



RW-2090E1 AND RW-2090FR PIPING PARTIAL PLAN

SCALE: 1"=10'

10 5 0 10 20

SCALE: 1"=10'

NOTES:

1. SEE DRAWING 450711-DP-001 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.

LEGEND

RECOVERY WELL / PUMP LOCATION

POC POINT OF CONNECTION BETWEEN NEW AND EXISTING MATERIALS

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FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE
PIPING
STONEHOUSE COVE RECOVERY
WELL PIPING PARTIAL PLANS

SCALE AS SHOWN

DRAWING NO. 450711-DP-005 REV. C

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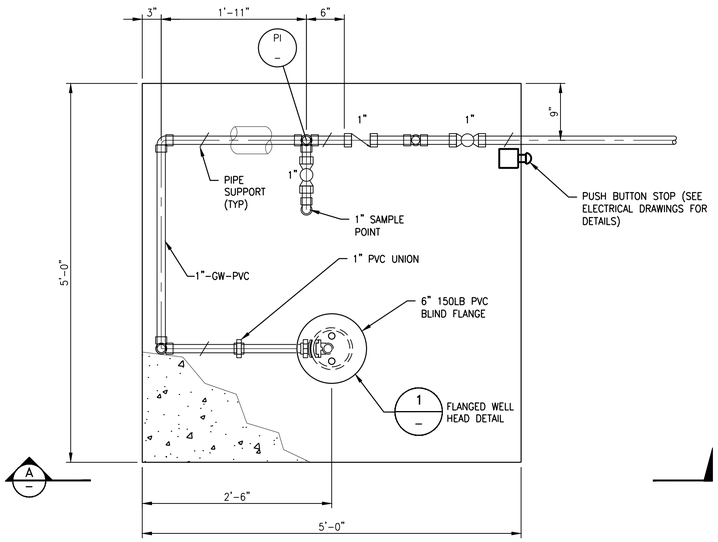
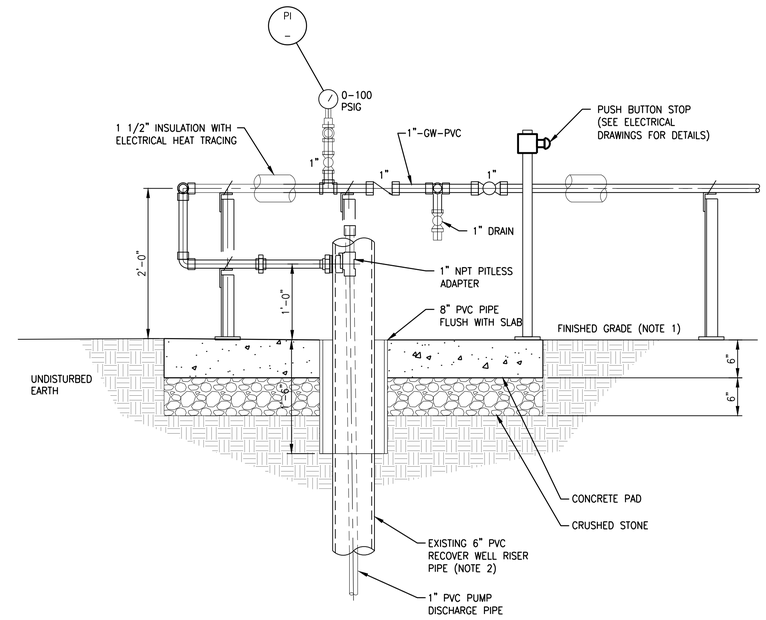


DETAIL NOTE: TYPICAL LAYOUT AND DIMENSIONS ARE SHOWN, DIMENSIONS AND CONFIGURATION VARY BETWEEN RECOVERY WELL LOCATIONS.

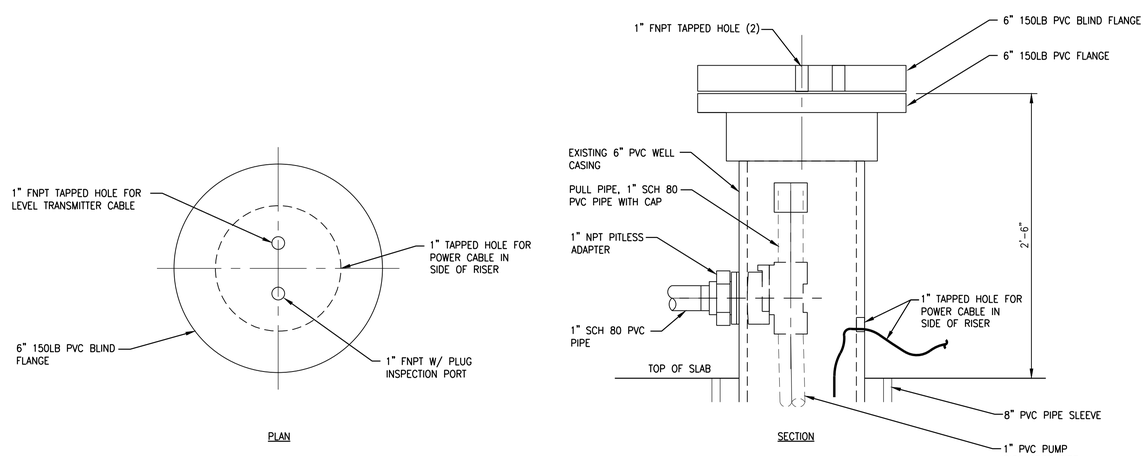
1 / DP-004 / DP-005 RECOVERY WELL PIPING PLAN DETAIL

SCALE: 1" = 1'-0"



A / – SECTION

SCALE: 1" = 1'-0"



1 / – FLANGED WELL HEAD DETAIL

NOT TO SCALE

1 1/2 0 1 2

SCALE: 1"=1'-0"

NOTES:

1. EXISTING GRADE MAY BE LOCATED WITHIN ASPHALT, CONCRETE OR EARTHEN AREAS. RESTORE SURFACES ADJACENT TO NEW RECOVERY PADS TO MATCH EXISTING FINAL GRADE SURFACE TYPE.
2. EXISTING RECOVERY WELL CASING FOR RW-2090E1 IS MADE FROM CARBON STEEL.

RECORD DRAWING

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301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

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PROJECT TITLE

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FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE

PIPING
RECOVERY WELL PIPING
DETAILS

SCALE AS SHOWN

DRAWING NO. 450711-DP-006 REV. C

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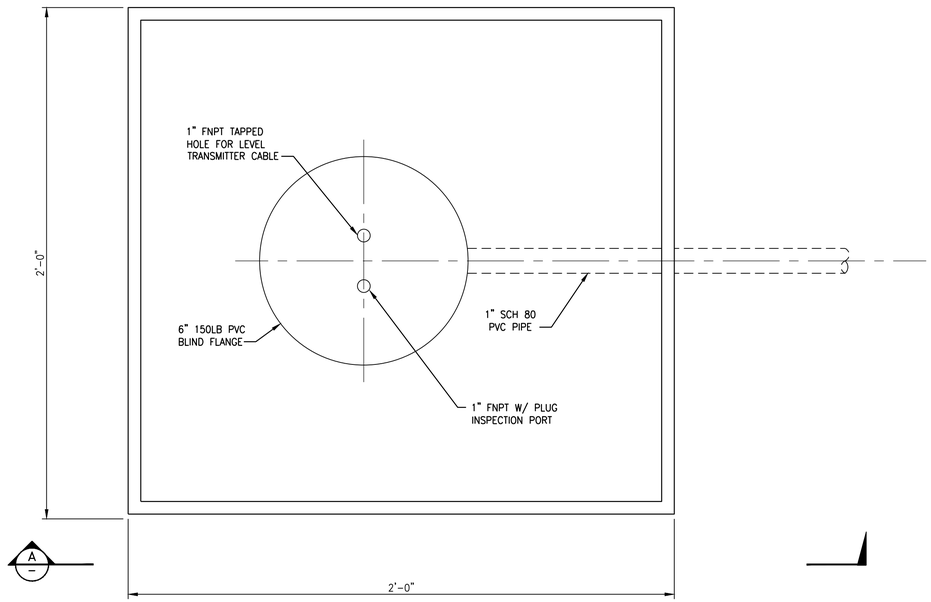
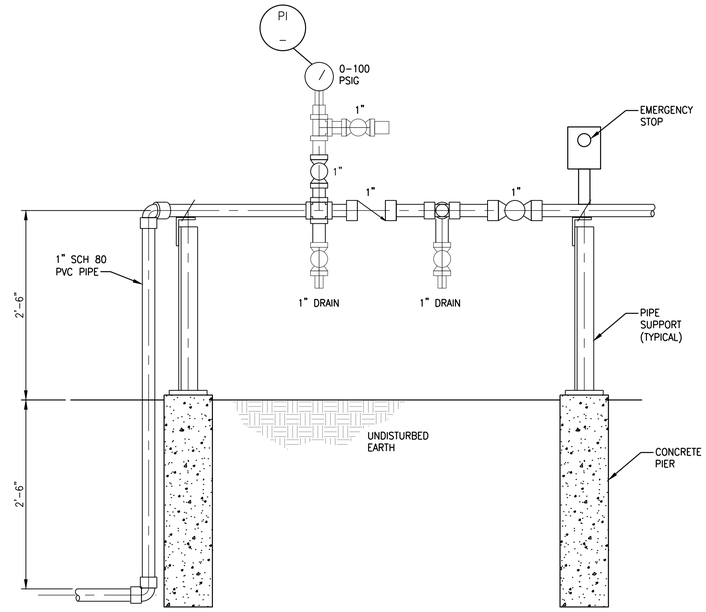
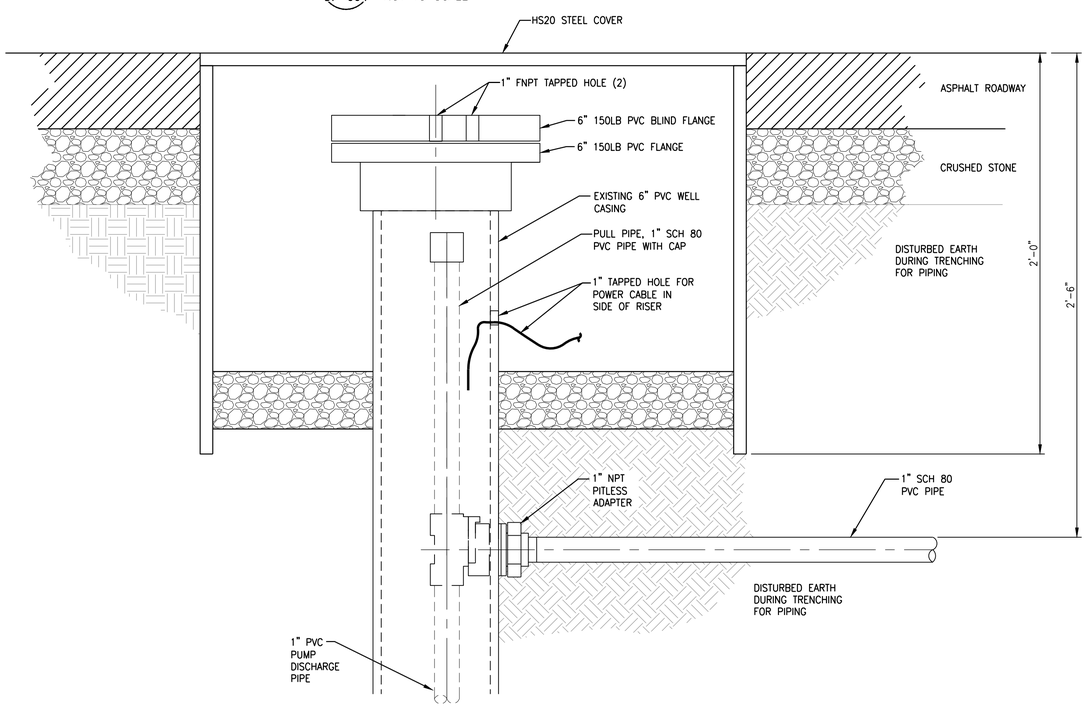


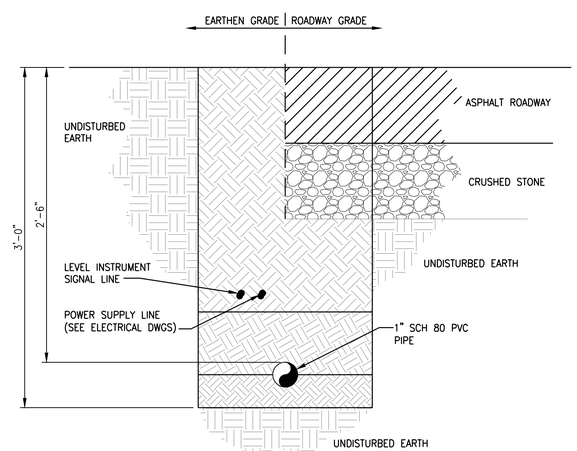
1 DP-004 WELL HEAD VAULT PIPING PLAN DETAIL
NOT TO SCALE



3 DP-004 VALVE STATION DETAIL
NOT TO SCALE



A – FLANGED WELL HEAD SECTION
NOT TO SCALE



2 DP-004 TRENCH DETAIL
NOT TO SCALE

NOTES:

1. EXISTING GRADE MAY BE LOCATED WITHIN ASPHALT, CONCRETE OR EARTHEN AREAS. RESTORE SURFACES ADJACENT TO NEW RECOVERY PADS TO MATCH EXISTING FINAL GRADE SURFACE TYPE.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN ANNOTATED TO REFLECT MAJOR CHANGES, IF ANY, WHICH HAVE OCCURRED DURING CONSTRUCTION. THESE DRAWINGS HAVE BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS WHO ARE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED, TO THE BEST OF OUR KNOWLEDGE, INFORMATION, AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

PER: JDF DATE: 7/11/18

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	RECORD DRAWING	7/11/18	JHG	JTS	JDF
B	ISSUED FOR DESIGN	1/3/18	JTS	ADM	JDF
A	ISSUED FOR BID	11/15/17	JHG	ADM	JDF

DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
SEAL

PARSONS

OFFICE
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 450711
WBS 01000

PROJECT TITLE
FMC
GROUNDWATER CONVEYANCE MODIFICATION
FORMER AGRICULTURAL PRODUCTS FACILITY
BALTIMORE, MD

DRAWING TITLE
PIPING
RECOVERY WELL PIPING
DETAILS

SCALE NO SCALE

DRAWING NO. 450711-DP-007 REV. C

FILE NAME: P:\FMC\450711 BALTIMORE GCM\ENGR\CAD\PIP\450711-DP-007.DWG
PLOT DATE: 7/11/2018 2:10 PM PLOTTED BY: SVALIA, JACK

CITY OF BALTIMORE RECORDATION TAX
EXEMPT DOCUMENT
REVENUE COLLECTIONS
DEPARTMENT OF FINANCE
Recordation Clerk
6/29/21
Date

ENVIRONMENTAL COVENANT

SITE NAME: Former FMC Agricultural Products Group Facility – LOT 001
GRANTOR/OWNER/HOLDER: FMC Corporation
PROPERTY ADDRESS: 1600 E Patapsco Ave., Baltimore, Maryland 21226

This Environmental Covenant is executed pursuant to the provisions of the Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article"). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the United States Environmental Protection Agency ("EPA"). This Property is one of three lots that comprise the Former FMC Agricultural Products Group Facility ("Facility"). Environmental covenants for Lots 007 and 008 are included in separate documents.

1. **Real Property Affected**. The real property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

7335

The postal street address of the Property is: 1600 E Patapsco Ave, Baltimore, MD 21226.
The City Land Records Deed Reference: Liber MLP No. 9598, folio 139.
Tax Account Identification Number: Ward - 25 Section - 07 Block - 7335D Lot - 001.
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.23264 -76.57897.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. FMC Corporation is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

3. **Holder/Grantee**. For purposes of this Environmental Covenant, FMC Corporation shall also be a Holder. The mailing address of the Holder is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

4. **EPA Regulatory Program Issuing Determination**. The following EPA regulatory program is responsible for having issued a determination requiring the use of this Environmental Covenant:

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0322, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

- Corrective Action Permit Pursuant to the Resource Conservation and Recovery Act issued to FMC Corporation (Permit No. MDD0030781875, "Permit"). The Permit requires the implementation and maintenance of the Final Remedy for the Property as selected by and described in the Final Decision and Response to Comments ("FDRTC") issued by EPA on April 14, 2011.

5. **Summary of Identified Contaminants.** The description of the contamination and remedy, which justifies the need for the activity and use limitations described under Item No. 6, is included in the Final Decision and Response to Comments (FDRTC) issued by USEPA on April 14, 2011 and in the USEPA-approved Soil Management Plan (SMP), dated August 7, 2020. As indicated in the FDRTC, volatile organic compounds (VOCs), primarily chlorobenzene, and semivolatile organic compounds (SVOCs) have been identified across the Site in both the shallow and intermediate aquifers, as well as in a perched aquifer zone at the north. A comprehensive investigation of soil quality was not necessary to characterize soil conditions because the Site's groundwater monitoring program identified the presence of chemicals of concern (COCs) sufficient to support the proposed remedial actions of capping the Site and recovering groundwater. Remedy implementation is required by the Permit for Corrective Action (USEPA ID No. MDD0030781875) issued by USEPA on January 30, 2013. The Site is currently vacant except for the groundwater treatment plant and associated support facilities. Redevelopment of the Site for industrial use will complete the capping remedy through installation of buildings, pavement and landscaped areas.

6. **Activity and Use Limitations**. The Property is subject to the following activity and use limitations (in accordance with Part II.B.4.a of the Permit), which the Owner, Holder, and each subsequent owner and holder of the Property shall abide by:

a. Groundwater beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by EPA in the FDRTC;

b. Well drilling is prohibited at the Facility without prior written EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the Final Remedy selected by EPA in the FDRTC;

c. The Facility shall not be used for any purposes other than industrial purposes unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;

d. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each existing structure and each new structure constructed at the Facility, not including existing structures that are idle or will not be used, unless it is demonstrated to EPA that vapor intrusion does not pose a threat to human health and

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0323, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

EPA provides prior written approval that vapor intrusion control system is not needed; and

e. The vapor intrusion control system and cap to be installed at the Property as a part of the Final Remedy shall be operated and maintained as necessary to protect their functional integrity in accordance with the requirements set forth in the Appendix A - Maintenance Plan for Fencing, Covers and Vapor Mitigation Systems of the EPA-approved Corrective Measures Implementation Work Plan for the Main Parcel, dated October 8, 2020, or as amended and approved by EPA.

7. **Notice of Limitations in Future Conveyances**. This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner shall notify EPA in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address, and telephone numbers of the transferee to who such interest is conveyed.

8. **Access by EPA and the Maryland Department of the Environment (Department)**. In addition to any rights already possessed by the EPA or the Department, this Environmental Covenant grants to EPA and the Department a right of access to the Property to implement or enforce this Environmental Covenant.

9. **Recordation and Filing with Registry**. The Owner shall record this Environmental Covenant in the Land Records Office of Baltimore City within thirty (30) days of EPA's approval of this Environmental Covenant and shall send proof of the recording to EPA and the Department within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx

10. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with §§ 1-808 or 1-809 of the Environment Article). The then-current owner agrees to provide EPA and the Department with written notice of the pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0324, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0325, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

11. EPA's Address.

A file-stamped copy of this Environmental Covenant shall be sent to:

Attn: Chief, Corrective Action Branch #1
U.S. EPA Region 3
1650 Arch Street
Mail Code: 3LD10
Philadelphia, PA 19103

Subsequent submissions required by this Environmental Covenant shall be sent to the Region 3 RCRA Corrective Action digital repository for institutional control and reporting documents. The documents shall reference the RCRA Facility name and RCRA ID Number. The documents shall be submitted to: R3_RCRAPOSTREM@epa.gov

12. The Department's Address. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

13. Administrative Record. The Administrative Record pertaining to the remedy selected by EPA in FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, PA 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at the address listed above.

14. Enforcement. This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environmental Article. The Holder shall have the right to rectify and/or remedy any breaches of violations of the activity and use limitations set forth in Paragraph 6 above in accordance with applicable laws.

15. Compliance Reporting. Within twenty-one (21) days after written request by EPA or the Department, the then-current owner of the Property shall submit, to EPA, the Department and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 6 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b) noncompliance with Paragraph 6 (Activity and Use Limitations), and c) an application for a

permit or other approval for any building or site work that could affect contamination on any part of the Property, the then-current owner will send a report to EPA, the Department and any Holder. The report will state whether there is compliance with Paragraph 6. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

16. **Severability.** The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year written below.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0326, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 001

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), and EPA, in the following form:

ATTEST:

FMC Corporation, Grantor/Owner and Holder/Grantee

Date: 12/10/2020

By: [signature]
Name: Douglas Groux
Title: Director, EHS Remediation & Governance

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF Philadelphia) SS:

On this 10 day of December, 2020, before me, the undersigned, personally appeared Douglas Groux, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Patricia A. McFall
Patricia A. McFall
Notary Public

Commonwealth of Pennsylvania - Notary Seal
Patricia A. McFall, Notary Public
Philadelphia County
My commission expires August 14, 2023
Commission number 1355559
Member, Pennsylvania Association of Notaries

My commission expires: 8/14/2023

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0327, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 001

APPROVED, by United States Environmental Protection Agency, Region III

Date: 12/18/2020 By: Stacie Driscoll

Stacie Driscoll
Acting Director
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA
)
)
COUNTY OF Montgomery) SS:

On this 18th day of December, 2020, before me, the undersigned, personally appeared John A. Armstead, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

My commission expires: Apr 28, 2022

Commonwealth of Pennsylvania - Notary Seal
SABRINA ANGELA PATTERSHALL - Notary Public
Montgomery County
My Commission Expires Apr 28, 2022
Commission Number 1283162

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0328, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 001

7335

EXHIBIT A
METES AND BOUNDS DESCRIPTION

WARD 25, SECTION 07, BLOCK 7335D, LOT 001 IN BALTIMORE CITY, MARYLAND

Beginning for the second at a point on the North side of Patapsco Avenue as laid out 60 feet wide at the end of the second line of Parcel "A" as described in the deed from Armor Thread Tire Corporation to U.S. Industrial Chemicals., Inc., dated February 15, 1946, and recorded among the Land Records of Baltimore City in Liber M.L.P. No. 6884, folio 6, and running thence and binding to the North side or Patapsco Avenue, and referring the courses of this description to the True Meridian as adopted by the Baltimore City Survey Control System, North 82 degrees 35 minutes 10 seconds West 1699.17 feet to the beginning of the second line of the first parcel of land which by Deed dated July 31, 1951, and recorded among the aforesaid Land Records in Liber MLP. 8531, folio 582, was conveyed by U.S. Industrial Chemicals, Inc.. to National Distillers Products Corporation, thence binding on the second, third and fourth lines of said first parcel the three following courses and distances: North 24 degrees 20 minutes 50 seconds East 79.17 feet; North 65 degrees 31 minutes 10seconds West 61.69 feet; and North 29 degrees16 minutes 10 seconds West 102.42 feet to intersect the third line of the land which by Deed dated April 30, 1919, and recorded among the aforesaid Land Records in Liber SCL. No. 3393, folio 231, was conveyed by United States Industrial Chemical Company, Inc. to the Baltimore & Ohio Railroad Company, thence binding on a part of said third line North 73 degrees 48 minutes 40 seconds East 1066.05 feet, thence leaving the outlines of said last-mentioned land and running for lines of division the four following courses and distances: South 81 degrees 57 minutes 50 seconds East 109.66 feet; South 49 degrees 01 minute 30 seconds East 184.46 feet; South 16 degrees 11 minutes 50 seconds East 391.31 feet; and North 73 degrees 48 minutes 50 seconds East 403.30 feet to the end of the first line of Parcel "B"' as described in a Deed from U. .S. Industrial Chemicals, Inc. to Armor Tread Tire Corporation dated February 15, 1946, and recorded among the aforesaid Land Records in Liber MLP No. 6884, folio 6, and running thence and binding on said first line of Parcel "B" reversely described in said Deed and on the second line of Parcel "A" as conveyed by Armor Tread Tire Corporation to U. S. Industrial Chemicals, Inc. by Deed dated February 15, 1946, and recorded among the aforesaid Land Records in Liber MLP No. 6884, folio 6 South 1 degree 48 minutes 10 seconds West 304.03 feet to the place of beginning.

Containing 15.0455 acres, more or less.

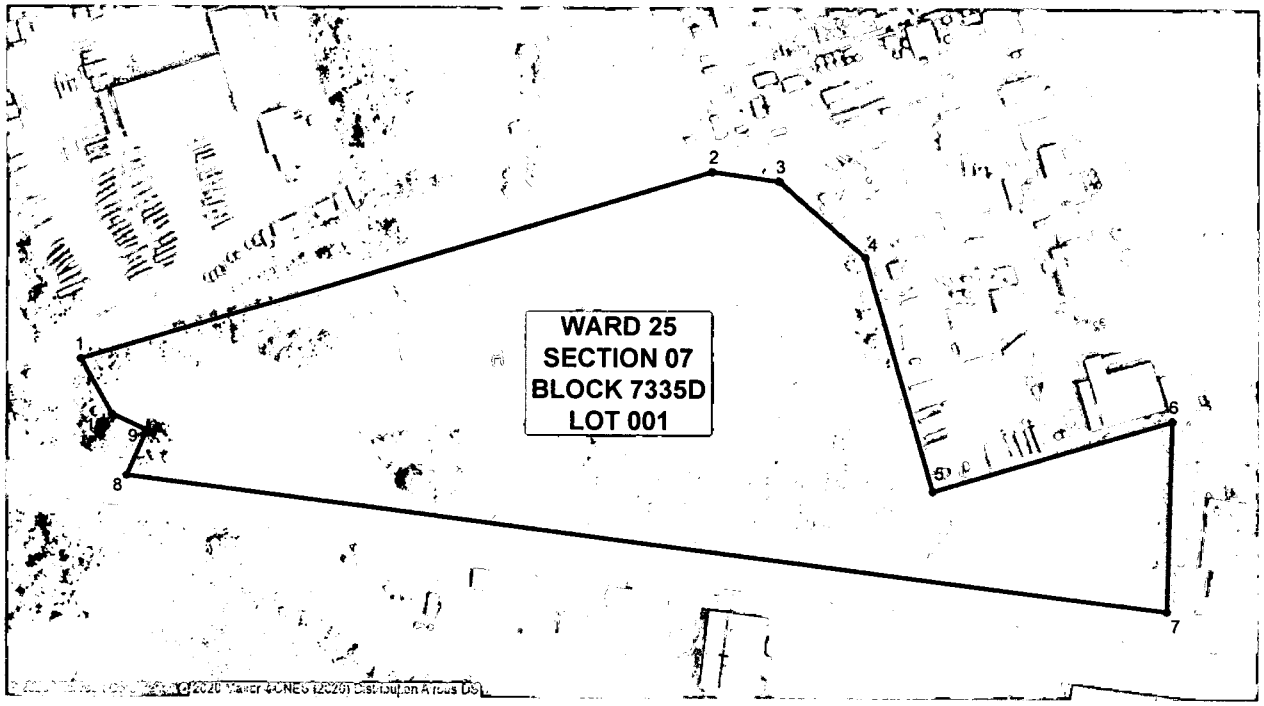
BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0329, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 001

EXHIBIT B
MAP OF PROPERTY

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0330, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

EXHIBIT B
EPA ID #MDD0030781875



COORDINATE TABLE

TURNING POINT #	NORTHING	EASTING
1	570600.343	1430612.818
2	570901.953	1431635.883
3	570887.061	1431744.507
4	570766.684	1431884.234
5	570391.314	1431994.690
6	570505.199	1432381.659
7	570201.372	1432373.327
8	570413.792	1430687.287
9	570486.005	1430719.711
10	570511.273	1430663.418

N

0 300 600

SCALE (IN FEET)

NOTE:
COORDINATES ARE MARYLAND STATE PLANE, NAD 83, US FEET

FAK 10/15/20	FMC AGRICULTURAL PRODUCTS GROUP FACILITY–LOT 001 1600 EAST PATAPSCO AVENUE BALTIMORE, MARYLAND	CADD Review ERM CHK'D ME 0551171 EXHIBIT B

Q:\Team\DMMV\CIntE-H\FMC\0551171\0551171-02.dwg, MIDDLE PARCEL, 10/15/2020 4:44:37 PM, FAK - Holland

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0331, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

3028

7335

Register 03
LR - Agreement
Recording Fee 75.00
Name: FMC CORPORATION
Ref: 1600 E. PATAPSCO
AVE.
LR - Agreement
Surcharge 40.00
==========
Subtotal: 115.00
==========
Total: 8,020.00
06/30/2021 02:29
CC24-ES
#15143383 CC0801 -
Baltimore City
Mitchell/CC08.01.03 -

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0332, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

State of Maryland Land Instrument Intake Sheet

☒ Baltimore City ☐ County:

BOOK: 23322 PAGE: 333

Information provided is for the use of the Clerk's Office, State Department of Assessments and Taxation, and County Finance Office only.

(Type or Print in Black Ink Only - All Copies Must Be Legible)

Space Reserved for Circuit Court Clerk Recording Valida

Type(s) of Instruments	(☒ Check Box If Addendum Intake Form is Attached.) [1] Environmental Covenant [2] Environmental Covenant [3] Environmental Covenant [4] Deed [5] Easement Agreement
Conveyance Type (Check Box)	☐ Improved Sale Arms-Length *[1]* ☐ Unimproved Sale Arms-Length *[2]* ☐ Multiple Accounts Arms-Length *[3]* ☐ Not an Arms-Length Sale *[9]*
Tax Exemptions (if Applicable) Cite or Explain Authority	**Recordation** **State Transfer** **County Transfer**

Consideration and Tax Calculations

Consideration Amount		Finance Office Use Only	
Purchase Price/Consideration	1,500,000.00	**Transfer and Recordation Tax Consideration**	
Any New Mortgage		Transfer Tax Consideration	
Balance of Existing Mortgage		X ( ) % =	
Other:		Less Exemption Amount -	
		Total Transfer Tax =	
Other:		Recordation Tax Consideration	
		X ( ) per $500 =	
Full Cash Value		TOTAL DUE	

Fees

Amount of Fees	Doc.1	Doc. 2	
Recording Charge	75.00	75.00	Agent:
Surcharge	40.00	40.00	Tax Bill:
State Recordation Tax			
State Transfer Tax			C.B. Credit:
County Transfer Tax			
Other			Ag. Tax/Other:
Other			

Description of Property

SDAT requires submission of all applicable information. A maximum of 40 characters will be indexed in accordance with the priority cited in Real Property Article Section 3-104(g)(3)(i).

District	Property Tax ID No. (1)	Grantor Liber/Folio	Map	Parcel No.	Var. LOG ☐ (5)

Subdivision Name	Lot 3(a)	Block(3b)	Sect/AR(3c)	Plat Ref.	SqFt/Acreage(4)

Location / Address of Property Being Conveyed (2)

Other Property Identifiers (if applicable)	Water Meter Account No.

Residential ☐ **or Non-Residential** ☒ **Fee simple** ☒ **or Ground Rent** ☐ **Amount:**

Partial Conveyance? ☐ **Yes** ☒ **No** Description/Amt. of SqFt/Acreage Transferred:

If Partial Conveyance, List Improvements Conveyed:

Transferred From

Doc.1 - Grantor(s) Name(s)	Doc. 2 - Grantor(s) Names(s)
FMC Corporation	FMC Corporation
Doc. 1 Owner(s) of Record, if different from Grantor(s)	Doc. 2 Owner(s) of Record, if different from Grantor(s)

Transferred To

Doc. 1 - Grantee(s) Name(s)	Doc. 2 - Grantee(s) Name(s)

New Owner's (Grantee) Mailing Address

4825 NW 41st Street, Suite 500, Riverside, MO 64150

Other Names to be Indexed

Doc. 1 - Additional Names to be Indexed (Optional)	Doc. 2-Additional Names to be Indexed (Optional)

Contact/Mail Information

Instrument Submitted By or Contact Person	
Name: Robin Cavey	☒ Return to Contact Person
Firm: Chicago Title Insurance Company	☐ Hold for Pickup
Address: One South Street, Suite 1250, Baltimore, MD 21202	
Phone: 410-230-9568 201901177MD	☐ Return Address Provided

IMPORTANT: ***BOTH*** **THE ORIGINAL DEED** ***AND*** **A PHOTOCOPY MUST ACCOMPANY EACH TRANSFER**

Assessment Information

☐ Yes ☒ No Will the property being conveyed be the grantee's principal residence?
☐ Yes ☒ No Does transfer include personal property? If yes, identify:
☐ Yes ☒ No Was property surveyed? If yes, attach copy of survey (if recorded, no copy required).

Assessment Use Only - Do Not Write Below This Line

☐ Terminal Verification ☐ Agricultural Verification ☐ Whole ☐ Part ☐ Tran. Process Verification

Transfer Number: Date Received: Deed Reference: Assigned Property No.:

Year	20	20	Geo.	Map	Sub	Block
Land			Zoning	Grid	Plat	Lot
Buildings			Use	Parcel	Section	Occ.Cd.
Total			Town Cd.	Ex.St.	Ex.Cd.	

REMARKS:

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0333, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Addendum

State of Maryland Land Instrument Intake Sheet

BOOK: 23322 PAGE: 334

☒ Baltimore City ☐ County:

The addendum form should be used when one transaction involves more than two instruments. Each instrument should be itemized in accordance with Section No. 1 of the Intake Sheet.

(Type or Print in Black Ink Only - All Copies Must Be Legible)

	Amount of Fees	Doc. 3	Doc. 4	Doc. 5	Doc. 6
(Continued) Fees	Recording Charge	75.00	20.00	75.00	
	Surcharge	40.00	40.00	40.00	
	State Recordation Tax		15,000.00		
	State Transfer Tax		7,500.00		
	County Transfer Tax		22,500.00		
	Yield Tax		15,750.00		
	Other				

(Continued) Transferred From	Doc. 3 - Grantor(s) Name(s)	Doc. 4 - Grantor(s) Name(s)
	FMC Corporation	FMC Corporation
	Doc. 5 - Grantor(s) Name(s)	Doc. 6 - Grantor(s) Name(s)
	FMC Corporation	
	Doc. 3 - Owner(s) of Record, if Different from Grantor(s)	Doc. 4 - Owner(s) of Record, if Different from Grantor(s)
	Doc. 5 - Owner(s) of Record, if Different from Grantor(s)	Doc. 6 - Owner(s) of Record, if Different from Grantor(s)
(Continued) Transferred To	Doc. 3 - Grantee(s) Name(s)	Doc. 4 - Grantee(s) Name(s)
	NPD Baltimore Industrial, LLC	NPD Baltimore Industrial, LLC
	Doc. 5 - Grantee(s) Name(s)	Doc. 6 - Grantee(s) Name(s)
(Continued) Other Names to be Indexed	Doc. 3 - Additional Names to be Indexed (Optional)	Doc. 4 - Additional Names to be Indexed (Optional)
	Doc. 5 - Additional Names to be Indexed (Optional)	Doc. 6 - Additional Names to be Indexed (Optional)
Special Instructions	Special Recording Instructions (if any)	

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0334, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

CITY OF BALTIMORE RECORDATION TAX
EXEMPT DOCUMENT
REVENUE COLLECTIONS
DEPARTMENT OF FINANCE
Recordation Clerk
6/29/21
Date

ENVIRONMENTAL COVENANT

SITE NAME: Former FMC Agricultural Products Group Facility - LOT 007
GRANTOR/OWNER/HOLDER: FMC Corporation
PROPERTY ADDRESS: 1600 E Patapsco Ave., Baltimore, Maryland 21226

This Environmental Covenant is executed pursuant to the provisions of Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article"). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the United States Environmental Protection Agency ("EPA"). This Property is one of three lots that comprise the Former FMC Agricultural Products Group Facility ("Facility"). Environmental covenants for Lots 001 and 008 are included in separate documents.

1. **Real Property Affected**. The real property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

-7335

The postal street address of the Property is: 1600 E Patapsco Ave., Baltimore, MD 21226.
The City Land Records Deed Reference: Liber MLP No. 9063, folio 565.
Tax Account Identification Number: Ward - 25 Section - 07 Block - 7335D Lot - 007.
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.23407/-76.58012.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. FMC Corporation is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

3. **Holder/Grantee**. For purposes of this Environmental Covenant, FMC Corporation shall also be a Holder. The mailing address of the Holder is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

4. **EPA Regulatory Program Issuing Determination**. The following EPA regulatory program is responsible for having issued a determination requiring the use of this Environmental Covenant:

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0335, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0336, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

- Corrective Action Permit Pursuant to the Resource Conservation and Recovery Act issued to FMC Corporation (Permit No. MDD0030781875, "Permit"). The Permit requires the implementation and maintenance of the Final Remedy for the Property as selected by and described in the Final Decision and Response to Comments ("FDRTC") issued by EPA on April 14, 2011.

5. **Summary of Identified Contaminants.** The description of the contamination and remedy, which justifies the need for the activity and use limitations described under Item No. 6, is included in the Final Decision and Response to Comments (FDRTC) issued by USEPA on April 14, 2011 and in the USEPA-approved Soil Management Plan (SMP), dated August 7, 2020. As indicated in the FDRTC, volatile organic compounds (VOCs), primarily chlorobenzene, and semivolatile organic compounds (SVOCs) have been identified across the Site in both the shallow and intermediate aquifers, as well as in a perched aquifer zone at the north. A comprehensive investigation of soil quality was not necessary to characterize soil conditions because the Site's groundwater monitoring program identified the presence of chemicals of concern (COCs) sufficient to support the proposed remedial actions of capping the Site and recovering groundwater. Remedy implementation is required by the Permit for Corrective Action (USEPA ID No. MDD0030781875) issued by USEPA on January 30, 2013. The Site is currently vacant except for the groundwater treatment plant and associated support facilities. Redevelopment of the Site for industrial use will complete the capping remedy through installation of buildings, pavement and landscaped areas.

6. **Activity and Use Limitations**. The Property is subject to the following activity and use limitations (in accordance with Part II.B.4.a of the Permit), which the Owner, Holder, and each subsequent owner and holder of the Property shall abide by:

a. Groundwater beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by EPA in the FDRTC;
b. Well drilling is prohibited at the Facility without prior written EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the Final Remedy selected by EPA in the FDRTC;
c. The Facility shall not be used for any purposes other than industrial purposes unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;
d. All earth-moving activities on Facility property, including construction and drilling, shall be done in accordance with the EPA-approved Soil Management Plan, dated August 7, 2020, or as amended and approved by EPA;

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0337, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

e. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each existing structure and each new structure constructed at the facility, not including existing structures that are idle or will not be used, unless it is demonstrated to EPA that vapor intrusion does not pose a threat to human health and EPA provides prior written approval that vapor intrusion control system is not needed; and

f. The vapor intrusion control system and cap to be installed at the Property as a part of the Final Remedy shall be operated and maintained as necessary to protect their functional integrity in accordance with the requirements set forth in the Appendix A - Maintenance Plan for Fencing, Covers and Vapor Mitigation Systems of the EPA-approved Corrective Measures Implementation Work Plan for the Main Parcel, dated October 8, 2020, or as amended and approved by EPA.

7. **Notice of Limitations in Future Conveyances**. This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner shall notify EPA in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address, and telephone numbers of the transferee to who such interest is conveyed.

8. **Access by EPA and the Maryland Department of the Environment (Department)**. In addition to any rights already possessed by the EPA and the Department, this Environmental Covenant grants to EPA and the Department a right of access of the Property to implement or enforce this Environmental Covenant.

9. **Recordation & Filing with Registry**. The Owner shall record this Environmental Covenant in the Land Records of Baltimore City within thirty (30) days of EPA's approval of this Environmental Covenant and shall send proof of the recording to EPA and the Department within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx

10. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with §1-808 or § 1-809 of the Environment Article. The then-current owner agrees to provide EPA and the Department with written notice of the

pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

11. **EPA's Address**.

A file-stamped copy of this Environmental Covenant shall be sent to:

Attn: Chief, Corrective Action Branch #1
U.S. EPA Region 3
1650 Arch Street
Mail Code: 3LD10
Philadelphia, PA 19103

Subsequent submissions required by this Environmental Covenant shall be sent to the Region 3 RCRA Corrective Action digital repository for institutional control and reporting documents. The documents shall reference the RCRA Facility name and RCRA ID Number. The documents shall be submitted to: R3_RCRAPOSTREM@epa.gov

12. **The Department's Address**. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

13. **Administrative Record**. The Administrative Record pertaining to the remedy selected by EPA in the FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, PA 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at the address listed above.

14. **Enforcement**. This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environmental Article. The Holder shall have the right to rectify and/or remedy any breaches of violations of the activity and use limitations set forth in Paragraph 6 above in accordance with applicable laws.

15. **Compliance Reporting**. Within twenty-one (21) days after written request by EPA or the Department, the then-current owner of the Property shall submit, to EPA, the Department and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 6 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b)

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0338, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

noncompliance with Paragraph 6 (Activity and Use Limitations), and c) an application for a permit or other approval for any building or site work that could affect contamination on any part of the Property, the then-current owner will send a report to EPA, the Department and any Holder. The report will state whether there is compliance with Paragraph 6. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

16. **Severability.** The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year written below.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0339, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9063, folio 565
WARD 25, SECTION 07, BLOCK 7335D, LOT 007

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), and EPA, in the following form:

ATTEST:

FMC Corporation, Grantor/Owner and Holder/Grantee

Date: 12/10/2020

By: _____
Name: Douglas Groux
Title: Director, EHS Remediation & Governance

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF Philadelphia) SS:

On this 10 day of December, 2020, before me, the undersigned, personally appeared Douglas Groux, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Patricia A. McFall
Patricia A. McFall
Notary Public

Commonwealth of Pennsylvania - Notary Seal
Patricia A. McFall, Notary Public
Philadelphia County
My commission expires August 14, 2023
Commission number 1355559
Member, Pennsylvania Association of Notaries

My commission expires: 8/14/2023

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0340, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9063, folio 565
WARD 25, SECTION 07, BLOCK 7335D, LOT 007

APPROVED, by United States Environmental Protection Agency, Region III

Date: 12/18/2020 By: Stacie Driscoll

Stacie Driscoll
Acting Director
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA
)
)
COUNTY OF Montgomery) SS:

On this 18th day of December, 2020 before me, the undersigned, personally appeared Stacie Driscoll, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

My commission expires: April 28, 2022

Commonwealth of Pennsylvania - Notary Seal
SABRINA ANGELA PATTERSHALL - Notary Public
Montgomery County
My Commission Expires Apr 28, 2022
Commission Number 1283162

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0341, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9063, folio 565
WARD 25, SECTION 07, BLOCK 7335D, LOT 007

EXHIBIT A
METES AND BOUNDS DESCRIPTION

WARD 25, SECTION 07, BLOCK 7335D, LOT 007 IN BALTIMORE CITY, MARYLAND

7335

Beginning for the first at a point at the end of the second line of the land which by Deed dated February 4, 1953, and recorded among the land records of Baltimore City in Liber MLP No. 9063, folio 565, was conveyed by National Distillers Products Corporation to American Alcolac Corporation, said point of beginning being also in the first line of the land which by Deed dated August 30, 1919, and recorded among the aforesaid Land Records in Liber SCL. No. 3393, folio 231, was conveyed by United States Industrial Chemical Co., Inc. to the Baltimore Ohio Railroad Company, and running thence and binding on a part of the- first line of said last mentioned land, and referring he courses of this description to the True Meridian as adopted by the Baltimore City Survey Control System, South 73 degrees 48 minutes 40 seconds West 1003.55 feet to the end of the third line of the first parcel of land which by Deed dated September 28,1944, and recorded among the aforesaid Land Records in Liber MLP No. 6643, folio 547, was conveyed by United States Industrial Chemicals, Inc. to Defense Plant Corporation, and running thence and binding reversely on said third line and on the second line of said first parcel North 66 degrees 37 minutes 00 seconds East 357.08 feet and North 14 degrees l7 minutes 20 seconds West 503.41 feet to intersect the second line of the tenth parcel of land which by Deed dàted Jul y 31, 1951, and recorded among the aforesaid Land Records in Liber MLP No. 8531, folio 582, was conveyed by U.S. Industrial Chemicals, Inc. to National Distillers Products Corporation, thence binding reversely on a part of said second line North 73 degrees 17 minutes 40 seconds East 632.62 feet to the end of the third line of the land first herein referred to, and thence binding reversely on said third line South 16 degrees 11 minutes 20 seconds East 553.56 feet to the place- of beginning.

Containing 8.2930 acres, more or less.

Saving and excepting therefrom, however, so much thereof as by Deed dated January 9, 1974 and recorded among the Land Records of Baltimore City in Liber RHB No. 3093, folio 476 was granted and conveyed by FMC Corporation unto Alcolac Inc.

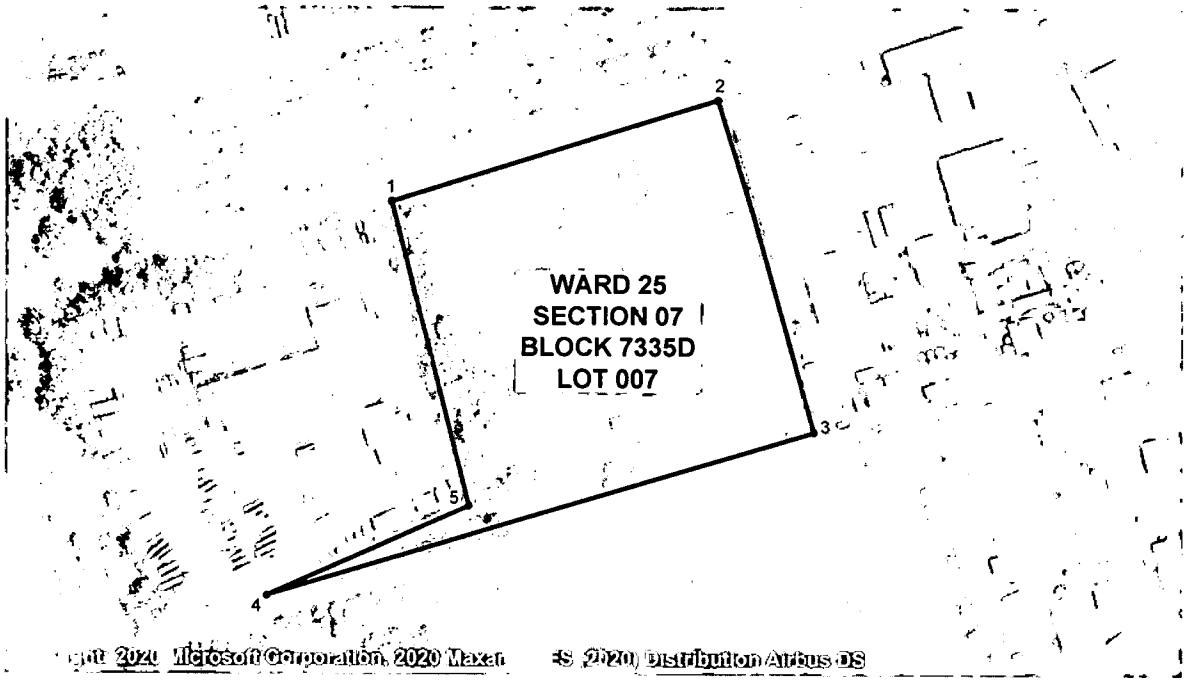
BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0342, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1600 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9063, folio 565
WARD 25, SECTION 07, BLOCK 7335D, LOT 007

EXHIBIT B
MAP OF PROPERTY

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0343, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

EXHIBIT B
EPA ID #MDD0030781875



COORDINATE TABLE

TURNING POINT #	NORTHING	EASTING
1	571323.008	1430953.575
2	571484.564	1431481.748
3	570954.681	1431637.913
4	570693.537	1430752.116
5	570836.721	1431079.532

N

0 300 600

SCALE (IN FEET)

NOTE:
COORDINATES ARE MARYLAND STATE PLANE, NAD 83, US FEET

FAK 10/15/20	FMC AGRICULTURAL PRODUCTS GROUP FACILITY–LOT 007 1600 EAST PATAPSCO AVENUE BALTIMORE, MARYLAND	CADD Review ERM CHK'D ME 0551171 EXHIBIT B

Q:\Team\DMMV\CintE-H\FMC\0551171\0551171-03.dwg, NORTHERN PARCEL, 10/15/2020 4:45:27 PM, FAK - Holland

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0344, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0345, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

3029

73335 RD

Register 03
LR - Agreement
Recording Fee 75.00
Name: FMC CORPORATION
Ref: 1600 E. PATAPSCO
AVE.
LR - Agreement
Surcharge 40.00
==========
Subtotal: 115.00
==========
Total: 8,020.00
06/30/2021 02:29
CC24-ES
#1514338 3 CC0801 -
Baltimore City
Mitchell/CC08.01.03 -

(2) 40 75

CITY OF BALTIMORE RECORDATION TAX
EXEMPT DOCUMENT
REVENUE COLLECTIONS
DEPARTMENT OF FINANCE
Recordation Clerk
6/29/21
Date

ENVIRONMENTAL COVENANT

SITE NAME: Former FMC Agricultural Products Group Facility – LOT 008
GRANTOR/OWNER/HOLDER: FMC Corporation
PROPERTY ADDRESS: 1701 E Patapsco Ave., Baltimore, Maryland 21226

This Environmental Covenant is executed pursuant to Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article"). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the United States Environmental Protection Agency ("EPA"). This Property is one of three lots that comprise the Former FMC Agricultural Products Group Facility ("Facility"). Environmental covenants for Lots 001 and 007 are included in separate documents.

1. **Real Property Affected**. The real property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

7335

The postal street address of the Property is: 1701 E Patapsco Ave., Baltimore, MD 21226.
The City Land Records Deed Reference: Liber MLP No. 9598, folio 139.
Tax Account Identification Number: Ward - 25 Section - 07 Block - 7335D Lot - 008.
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.22826/-76.57683.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. FMC Corporation is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

3. **Holder/Grantee**. For purposes of this Environmental Covenant, FMC Corporation shall also be a Holder. The mailing address of the Holder is: FMC Tower at Cira Center South, 2929 Walnut Street, Philadelphia, Pennsylvania 19104.

4. **EPA Regulatory Program Issuing Determination**. The following EPA regulatory program is responsible for having issued a determination requiring the use of this Environmental Covenant:

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0346, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

- Corrective Action Permit Pursuant to the Resource Conservation and Recovery Act issued to FMC Corporation (Permit No. MDD0030781875, "Permit"). The Permit requires the implementation and maintenance of the Final Remedy for the Property as selected by and described in the Final Decision and Response to Comments ("FDRTC") issued by EPA on April 14, 2011.

5. **Summary of Identified Contaminants.** The description of the contamination and remedy, which justifies the need for the activity and use limitations described under Item No. 6, is included in the Final Decision and Response to Comments (FDRTC) issued by USEPA on April 14, 2011 and in the USEPA-approved Soil Management Plan (SMP), dated August 7, 2020. As indicated in the FDRTC, volatile organic compounds (VOCs), primarily chlorobenzene, and semivolatile organic compounds (SVOCs) have been identified across the Site in both the shallow and intermediate aquifers, as well as in a perched aquifer zone at the north. A comprehensive investigation of soil quality was not necessary to characterize soil conditions because the Site's groundwater monitoring program identified the presence of chemicals of concern (COCs) sufficient to support the proposed remedial actions of capping the Site and recovering groundwater. Remedy implementation is required by the Permit for Corrective Action (USEPA ID No. MDD0030781875) issued by USEPA on January 30, 2013. The Site is currently vacant except for the groundwater treatment plant and associated support facilities. Redevelopment of the Site for industrial use will complete the capping remedy through installation of buildings, pavement and landscaped areas.

6. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations (in accordance with Part II.B.4.a of the Permit), which the Owner, Holder, and each subsequent owner and holder of the Property shall abide by:

a. Groundwater beneath the Facility shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by EPA in the FDRTC;

b. Well drilling is prohibited at the Facility without prior written EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the Final Remedy selected by EPA in the FDRTC;

c. The Facility shall not be used for any purposes other than industrial purposes unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;

d. All earth-moving activities on Facility property, including construction and drilling, shall be done in accordance with the EPA-approved Soil Management Plan, dated August 7, 2020, or as amended and approved by EPA;

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0347, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0348, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

e. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each existing structure and each new structure at the facility, not including existing structures that are idle or will not be used, unless it is demonstrated to EPA that vapor intrusion does not pose a threat to human health and EPA provides prior written approval that vapor intrusion control system is not needed; and

f. The vapor intrusion control system and cap to be installed at the Property as a part of the Final Remedy shall be operated and maintained as necessary to protect their functional integrity in accordance with the requirements set forth in the Appendix A - Maintenance Plan for Fencing, Covers and Vapor Mitigation Systems of the EPA-approved Corrective Measures Implementation Work Plan for the Main Parcel, dated October 8, 2020, or as amended and approved by EPA.

7. **Notice of Limitations in Future Conveyances**. This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner shall notify EPA in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address, and telephone numbers of the transferee to whom such interest is conveyed.

8. **Access by EPA and the Maryland Department of the Environment (Department)**. In addition to any rights already possessed by the EPA and the Department, this Environmental Covenant grants to EPA and the Department a right of access to the Property to implement or enforce this Environmental Covenant.

9. **Recordation & Filing with Registry**. The Owner shall record this Environmental Covenant in the Land Records of Baltimore City within thirty (30) days of EPA's approval of this Environmental Covenant and shall send proof of the recording to EPA and the Department within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx

10. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with § 1-808 or § 1-809 of the Environment Article. The then-current owner agrees to provide EPA and the Department with written notice of the

pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

11. EPA's Address.

A file-stamped copy of this Environmental Covenant shall be sent to:

Attn: Chief, Corrective Action Branch #1
U.S. EPA Region 3
1650 Arch Street
Mail Code: 3LD10
Philadelphia, PA 19103

Subsequent submissions required by this Environmental Covenant shall be sent to the Region 3 RCRA Corrective Action digital repository for institutional control and reporting documents. The documents shall reference the RCRA Facility name and RCRA ID Number. The documents shall be submitted to: R3_RCRAPOSTREM@epa.gov

12. The Department's Address. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

13. Administrative Record. The Administrative Record pertaining to the remedy selected by EPA in the FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, PA 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at the address listed above.

14. Enforcement. This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environmental Article. The Holder shall have the right to rectify and/or remedy any breaches of violations of the activity and use limitations set forth in Paragraph 6 above in accordance with applicable laws.

15. Compliance Reporting. Within twenty-one (21) days after written request by EPA or the Department, the then-current owner of the Property shall submit, to EPA, the Department and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 6 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b)

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0349, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

noncompliance with Paragraph 6 (Activity and Use Limitations), and c) an application for a permit or other approval for any building or site work that could affect contamination on any part of the Property, the then-current owner will send a report to EPA, the Department and any Holder. The report will state whether there is compliance with Paragraph 6. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

16. **Severability.** The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year first written below.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0350, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1701 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 008

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), and EPA, in the following form:

ATTEST:

FMC Corporation, Grantor/Owner and Holder/Grantee

Date: 12/10/2020

By: _____
Name: Douglas Groux
Title: Director, EHS Remediation & Governance

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF Philadelphia) SS:

On this 10 day of December, 2020, before me, the undersigned, personally appeared Douglas Groux, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Patricia A. McFall
Patricia A. McFall
Notary Public

Commonwealth of Pennsylvania - Notary Seal
Patricia A. McFall, Notary Public
Philadelphia County
My commission expires August 14, 2023
Commission number 1355559
Member, Pennsylvania Association of Notaries

My commission expires: 8/14/2023

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0351, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1701 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 008

APPROVED, by United States Environmental Protection Agency, Region III

Date: 12/18/2020

By: Stacie Driscoll
Stacie Driscoll
Acting Director
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA
)
)
COUNTY OF Montgomery) SS:

On this 18th day of December, 2020, before me, the undersigned, personally appeared Stacie Driscoll, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

My commission expires: April 28, 2022

Commonwealth of Pennsylvania - Notary Seal
SABRINA ANGELA PATTERSHALL - Notary Public
Montgomery County
My Commission Expires Apr 28, 2022
Commission Number 1283162

Commonwealth of Pennsylvania - Notary Seal
SABRINA ANGELA PATTERSHALL - Notary Public
Montgomery County
My Commission Expires Apr 28, 2022
Commission Number 1283162

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0352, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1701 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 008

EXHIBIT A
METES AND BOUNDS DESCRIPTION

WARD 25, SECTION 07, BLOCK 7335D, LOT 008 IN BALTIMORE CITY, MARYLAND

7335

BEGINNING for the third at the intersection of the South side of Patapsco Avenue as laid out 60 feet wide and the southwest side of Fairfield Road as laid out 30 feet wide, and running thence and binding on the South side of Patapsco Avenue, and referring the courses of this description to the True Meridian as adopted by the Baltimore City Survey Control System, North 82 degrees 35 minutes 10 seconds West 1996 feet more or less to the shore line of Stonehouse Cove and to the end of the first line of the second parcel of land which by Deed dated July 31, 1951 and recorded among the Land Records of Baltimore City in Liber MLP No. 8531 , folio 582, was conveyed by U.S. Industrial Chemicals., Inc. to National Distillers Products Corporation, thence binding in an easterly, southerly, southeasterly and easterly direction along the shoreline of Stonehouse Cove and continuing along the shore line or Curtis Bay 4450 feet more or less to the end of the first line of the eleventh parcel of land described in the Deed from U.S. Industrial Chemicals, Inc. to National Distillers Products Corporation, herein referred to, thence binding reversely on said first line North 13 degrees 17 minutes 10 seconds West 1217.5 feet more or less to the beginning of said eleventh parcel and to the southwest side of Fairfield Road, thence binding on the southwest side of Fairfield Road North 13 degrees 38 minutes 40 seconds West 40.00 feet to the beginning of the 20th line of the second parcel of land herein referred to, thence binding on the 20th and 21st lines of said parcel the two following courses and distances: North 21 degrees 13 minutes 10 seconds West 297.00 feet and North 28 degrees 12 minutes 10 seconds West 141.00 feet to the beginning of the second line of the seventh parcel of land herein referred to, and thence binding on said second line and on the southwest side of Fairfield Road North 28 degrees 12 minutes 10 seconds West 56.00 feet to the place of beginning.

Containing 68.00 acres, more or less.

Saving and excepting therefrom, however, so much thereof as by Deed dated June 3, 1974 and recorded among the Land Records of Baltimore City in Liber RHB No. 3133, folio 162 was granted and conveyed by FMC Corporation unto Mayor and City Council of Baltimore.

Also saving and excepting therefrom, however, so much thereof as by Deed dated January 15, 1979 and recorded among the Land Records of Baltimore City in Liber WA No. 3712, folio 337 was granted and conveyed by FMC Corporation unto Mayor and City Council of Baltimore.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0353, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

Environmental Covenant
1701 E Patapsco Ave., Baltimore, MD 21226
Liber MLP No. 9598, folio 139
WARD 25, SECTION 07, BLOCK 7335D, LOT 008

EXHIBIT B
MAP OF PROPERTY

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0354, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0355, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

EXHIBIT B
EPA ID #MDD0030781875

COORDINATE TABLES

TURNING POINT #	NORTHING	EASTING
1	570351.071	1430704.901
2	570111.769	1432604.314
3	570098.430	1432654.348
4	570079.665	1432681.782
5	570037.871	1432712.354
6	569909.315	1432781.967
7	569679.427	1432904.126
8	569648.303	1432916.356
9	568438.307	1433207.539
10	568364.291	1433047.551
11	568343.495	1433010.589
12	568299.309	1432949.377
13	568249.151	1432851.936
14	568198.902	1432732.794
15	568183.698	1432704.277
16	568122.715	1432549.454
17	568095.394	1432470.970
18	568083.112	1432444.413
19	568035.675	1432365.365
20	568006.648	1432321.821
21	567995.359	1432280.055
22	568004.189	1432240.058
23	568023.885	1432203.720
24	568054.911	1432155.427
25	568080.100	1432103.718
26	568100.339	1432070.553
27	568132.207	1432033.901
28	568162.040	1432009.275
29	568172.469	1431979.217
30	568207.495	1431938.317
31	568261.436	1431864.258
32	568300.439	1431825.193
33	568324.677	1431799.158
34	568344.453	1431781.874
35	568373.683	1431747.084
36	568397.779	1431687.176
37	568414.840	1431653.496
38	568440.113	1431621.898
39	568467.827	1431604.317
40	568524.635	1431582.909
41	568557.150	1431574.569
42	568588.231	1431574.189
43	568629.750	1431595.966
44	568688.919	1431633.033
45	568737.170	1431654.003
46	568779.286	1431663.089
47	568823.888	1431634.058

TURNING POINT #	NORTHING	EASTING
48	568878.065	1431616.366
49	568927.019	1431615.367
50	568961.178	1431620.518
51	569002.704	1431615.051
52	569032.871	1431614.661
53	569049.825	1431618.824
54	569077.284	1431603.625
55	569096.280	1431589.785
56	569153.337	1431564.671
57	569211.213	1431545.640
58	569263.862	1431542.245
59	569323.918	1431538.289
60	569353.312	1431542.930
61	569389.766	1431554.704
62	569434.070	1431572.012
63	569494.442	1431561.082
64	569539.891	1431551.040
65	569564.023	1431535.227
66	569644.102	1431455.639
67	569747.689	1431411.602
68	569814.498	1431396.020
69	569843.370	1431382.063
70	569947.728	1431322.091
71	570033.003	1431260.521
72	570058.057	1431229.545
73	570063.836	1431189.010
74	570070.759	1431150.832
75	570075.275	1431107.358
76	570081.977	1431072.273
77	570099.411	1431045.727
78	570140.686	1431009.209
79	570157.088	1430996.532
80	570163.597	1430985.820
81	570178.124	1430950.356
82	570190.927	1430924.365
83	570196.196	1430915.994
84	570201.352	1430909.989
85	570238.497	1430880.869
86	570247.810	1430875.732
87	570267.222	1430863.457
88	570272.787	1430851.802
89	570290.736	1430812.645
90	570298.000	1430776.397
91	570316.430	1430747.156
92	570327.550	1430734.562
93	570336.360	1430717.961
94	570347.872	1430704.497

NOTE: COORDINATES ARE MARYLAND STATE PLANE, NAD 83, US FEET

0 300 600
SCALE (IN FEET)

N

Drawn By FAK		FMC AGRICULTURAL PRODUCTS GROUP FACILITY–LOT 008 1701 EAST PATAPSCO AVENUE BALTIMORE, MARYLAND	CHK'D ME
CADD Review ERM			0551171
Date Drawn/Rev'd 10/15/20			EXHIBIT B

Q:\Team\DMMV\Clnt\E-H\FMC\0551171\0551171-01.dwg, SOUTHERN PARCEL, 10/15/2020 4:48:17 PM, FAK - Holland, NJ.

BALTIMORE CITY CIRCUIT COURT (Land Records) MB 23322, p. 0356, MSA_CE164_32479. Date available 07/14/2021. Printed 07/27/2021.

3030

7335 RD

Register 03
LR - Agreement
Recording Fee 75.00
Name: FMC CORPORATION
Ref: 1600 E. PATAPSCO
AVE.
LR - Agreement
Surcharge 40.00
==========
Subtotal: 115.00
==========
Total: 8,020.00
06/30/2021 02:29
CC24-ES
#15143383 CC0801 -
Baltimore City
Mitchell/CC08.01.03 -

(3 40
75

FMC Corporation
FMC Tower at Cira Center South
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted Electronically

July 2, 2021

Mr. John Hopkins
Land and Chemicals Division (3LC20)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Revised Off-Site Use Control Plan
Permit for Corrective Action, EPA ID No MDD 0030781875 (Permit)
FMC Corporation, Former Agricultural Products Group Facility – North Parcel (Site)
Baltimore, Maryland

Dear Mr. Hopkins:

FMC Corporation is submitting a revised Off-Site Use Control Plan (Plan) for the referenced Site to the United States Department of Environmental Protection (USEPA) for review and approval. This revised Plan is an update of Appendix E Off-Site Use Control Plan, presented in the 19 October 2016 Corrective Measures Implementation Work Plan for the North Parcel (50 Percent Design Submittal) that was approved by the USEPA on 28 March 2017. Andrew Joslyn of FMC had submitted a previous revision of this Plan on August 14, 2020 pursuant to your request to include language concerning FMC's use of "best efforts". You approved this revised version during a September 10, 2020 conference call. The version submitted herein includes these previously approved revisions and additional revisions to address changes in ownership and parcel information (for on-Site and off-Site properties) as well as other minor editorial changes.

FMC will use best efforts to implement the five use controls listed in the Permit through the application of an institutional control, namely the recordation of an environmental covenant onto the deeds for the properties. In this manner, the use controls would "run with the land" so that future owners would be bound by these restrictions. Revised drafts of the environmental covenants for the Dana and Fleet Properties are included as Attachments A and B in the revised Off-Site Use Control Plan. FMC revised the environmental covenants to include language similar to that required by the USEPA for the on-site environmental covenants per your email on 14 December 2020. Concurrent to this submittal to EPA, FMC is providing the draft environmental covenants attached to this Plan to NorthPoint (the current Site owner) so they can begin outreach to Dana and Fleet.

If you have any questions regarding this submittal, please do not hesitate to contact me at (215) 299-6358.

Sincerely,

Jonathan Bucca, P.E.
Remediation Project Manager

Enclosure: Off-Site Use Control Plan, Former Agricultural Products Group Facility Baltimore, Maryland

cc: L. Pizarro, EPA
B. Coblentz, Maryland Department of Environment
D. Groux/A. Joslyn/B. McGinnis/E. Feryo, FMC
M. Erbe/R. Keating, ERM
D. Zuk, NorthPoint

FMC Corporation

Corrective Measures Implementation Work Plan for the North Parcel Appendix E Off-Site Use Control Plan

Former Agricultural Products Group Facility
Baltimore, Maryland

July 2021

Environmental Resources Management
180 Admiral Cochrane Drive, Suite 400
Annapolis, Maryland 21401

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1 USE CONTROL RELATIONSHIP MATRIX

ATTACHMENTS

A DRAFT ENVIRONMENTAL COVENANT FOR DANA PROPERTY

B DRAFT ENVIRONMENTAL COVENANT FOR FLEET PROPERTY

LIST OF ACRONYMS

CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
COMAR	Code of Maryland Regulations
COC(s)	Constituent(s) of Concern
Dana	Dana Transport Trucking Terminal
ERM	Environmental Resources Management
Fleet	Fleet Transit, Inc.
FMC	FMC Corporation
FDRTC	Final Decision and Response to Comments
HASP	Health and Safety Plan
MDE	Maryland Department of the Environment
MIZOD	Maritime Industrial Zoning Overlay District
O&M	Operation & Maintenance
OSHA	Occupational Safety and Health Administration
UECA	Uniform Environmental Covenants Act
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile Organic Compound(s)

1.0 INTRODUCTION

On behalf of FMC Corporation (FMC), Environmental Resources Management (ERM) has prepared this Off-Site Use Control Plan for submittal to the United States Environmental Protection Agency (USEPA) with respect to the following off-site properties:

- Parcel Account Number 0325077335D006 located at 1550 East Patapsco Avenue, Baltimore, Maryland (hereafter known as Dana Transport Trucking Terminal (Dana) property), and
- Parcel Account Number 0325077335D004 located at 3400 Fairfield Road, Baltimore, Maryland (hereafter known as the Fleet Properties LLC (Fleet) property).

The use controls for these properties are intended to mitigate risk associated with impacts to the properties related to ground water conditions on the former Agricultural Products Group Facility North Parcel property located at 1600 East Patapsco Avenue, Baltimore, Maryland (the "Site"). The property is now owned by NorthPoint Development LLC.

The FDRTC requires that ground water contamination on the Site be controlled to prevent migration onto adjacent properties at unacceptable concentrations (USEPA, 2011). As described in the Corrective Measures Implementation (CMI) Work Plan for the North Parcel (ERM, 2016), source removal and capping will be conducted to remediate ground water quality. However, additional measures are warranted to protect the health of workers on the Dana and Fleet properties. Therefore, this Off-Site Use Control Plan has been prepared to meet the requirements of the FDRTC.

This Off-Site Use Control Plan has been prepared to conform to two USEPA guidance documents issued in December 2012:

- Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites (USEPA, 2012); and
- Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites (USEPA, 2012a).

1.1 PURPOSE

FMC will use best efforts to ensure that the following use controls are implemented for the Dana property and that they remain in place and effective and run with the land until USEPA determines that the use control is no longer necessary for the protection of human health or the environment:

1. Shallow ground water beneath the property shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at the property without prior USEPA approval to prevent inadvertent exposure to the contaminated ground water;
3. The property shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use; and
4. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a Health and Safety Plan (HASP).

FMC will use best efforts to ensure that the following use controls are implemented for the Fleet property and that they remain in place and effective and run with the land until USEPA determines that the use control is no longer necessary for the protection of human health or the environment:

1. Shallow ground water beneath the property shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at the property without prior USEPA approval to prevent inadvertent exposure to the contaminated ground water;
3. The property shall not be used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use;
4. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP; and
5. A vapor control system, the design of which shall be approved in advance by USEPA, shall be installed in each new structure constructed at the property.

The purpose of this Off-Site Use Control Plan is to identify the specific steps that FMC will take to implement, monitor, and enforce the above-listed use controls, and specify a schedule for implementation and reporting of the controls. The Off-Site Use Control Plan has been prepared by FMC based on the understanding that Fleet and Dana will agree to accept the proposed use controls. FMC will use best efforts to ensure that Fleet and Dana implement and comply with these use controls and FMC will be the primary party responsible for monitoring, maintaining, enforcing, and reporting on

compliance with these use controls as described in more detail in subsequent sections of this plan.

Changes to this Off-Site Use Control Plan made in response to negotiation of agreements with the two off-site landowners will be communicated to USEPA.

1.2 PLAN ORGANIZATION

The remainder of the Off-Site Use Control Plan is organized in accordance with USEPA guidance as follows (USEPA, 2012):

- **Section 2.0 – Site Details.** This section describes the basic Site characteristics, the Site history, property information, stakeholders, and mapping of the use control boundaries.
- **Section 3.0 – Implementation of Use Controls.** This section identifies the proposed use controls that will be needed to ensure long-term protection of human health and the environment, describes how the use controls will be implemented, and presents the schedule for the implementation of the use controls.
- **Section 4.0 –Monitoring, Reporting and Enforcement.** This section describes how the use controls will be monitored and enforced to assure continued protection of human health and the environment.
- **Section 5.0 –Modification and Termination.** This section describes how the use controls can be modified or terminated.

2.0 SITE DETAILS

2.1 SITE DESCRIPTION

The Dana property is located at 1550 East Patapsco Avenue in Baltimore, Maryland (Figure 1). The property is approximately 7 acres in size and is designated as Ward 25, Section 07, Block 7335D, Lot 006.

The Fleet property is located at 3410 Fairfield Road in Baltimore, Maryland (Figure 1). The property is approximately 17 acres in size and is designated as Ward 25, Section 07, Block 7335D, Lot 004.

The use controls are proposed to be implemented throughout the entirety of the Dana and Fleet properties, as opposed to limiting the application of use controls to the areas that overlies the impacted ground water. However, this approach will need to be negotiated with the property owners.

2.2 SITE CONDITIONS

2.2.1 *Current and Reasonably Anticipated Future Conditions*

The Dana property is currently used for a trucking terminal and is developed with one building that contains an office, maintenance shop, and truck wash area.

The Fleet property is currently used for outdoor vehicle storage. The property consists of a paved parking lot, and with one building that contains an office and maintenance shop.

No planned changes in use of either property are known or anticipated currently. However, both properties are zoned for industrial use and any future uses can be assumed to remain industrial.

2.2.2 *Subsurface Conditions*

No soil impacts attributable to the FMC property are present on the two off-site properties.

Perched ground water is present beneath both the Dana and Fleet properties. The perched water table is located at depths ranging from approximately 0.5 to 6 feet below ground surface. The perched water table on the Fleet property intercepts the southern drainage trench on the south side of the Fleet property,

suggesting that they are hydraulically connected. Water quality data collected from the trench supports this interpretation. Ground water flow in the perched aquifer is generally towards the west at both the Dana and Fleet properties.

Shallow ground water at and in the vicinity of the Dana and Fleet properties is defined as the Pleistocene aquifer. This aquifer consists of the Pleistocene alluvial deposits that locally overlie the deeper Patapsco Formation. Shallow ground water occurs at the Dana and Fleet properties in the Pleistocene sediments. The water table in the Pleistocene aquifer is located at depths ranging from approximately 3.5 to 11 feet below ground surface. Ground water flow in the Pleistocene aquifer is generally towards the north at the Dana property and north and east at the Fleet property.

Ground water characterization at the Dana and Fleet properties has identified several volatile organic compounds (VOCs) present at the northeastern portion of the Dana property and the southern portion of the Fleet property in both the perched and shallow aquifers. The results of the ground water sampling events are summarized in the Supplemental Site Investigation Report for the North Parcel (ERM, 2014). A number of VOCs were detected in ground water; however, the constituents of concern (COCs) contributing to unacceptable risk include benzene, chlorobenzene, and 1,1,2-trichloroethane. Chlorobenzene was the most consistently detected VOC in ground water across the Dana and Fleet properties.

Ground water investigation on the FMC property indicates that the deeper Patapsco Formation is not impacted, and thus ground water contamination is limited to the overlying perched and shallow aquifers. Ground water quality conditions in the Patapsco Formation beneath the Fleet and Dana properties are unknown. The use controls related to ground water on the off-site properties will be restricted to the perched and shallow zones. No use restrictions are proposed for the Patapsco Formation.

Soil gas samples collected on the Dana property adjacent to the enclosed office during implementation of the Supplemental SAP Addendum (ERM, 2014) indicated that chlorobenzene was not detected above the method detection limit. Therefore, the potential for vapor intrusion impacts from chlorobenzene in perched and shallow ground water on the Dana property is low, and therefore vapor mitigation on the Dana property is not warranted. There is a potential for vapor intrusion to occur in buildings that may be placed on the northern portion of North Parcel and on the adjacent portion of the Fleet property. Historic ground water quality data presented in the Ground Water Monitoring Plan for the North Parcel (ERM, 2016a) and the ground water flow direction on the Fleet property (ERM, 2020) do not suggest a concern at the existing building in the northeast corner of the property for vapor intrusion impacts from chlorobenzene in perched and shallow ground water.

2.2.3 *Risk Exposure Pathways*

Under an industrial land use scenario, there are two risk exposure pathways, namely site workers and construction workers. The required use controls will eliminate the following exposure pathways:

- **Site Worker**. Site workers at the Fleet property could be exposed to vapors emanating from perched ground water if buildings are constructed on the property in the future. Additionally, site workers at both the Dana and Fleet properties could be exposed to impacted ground water if site ground water was used for potable supply.
- **Construction Worker**. A construction worker could be exposed to impacted ground water while working in a trench excavated on the impacted portion of both off-Site properties.

2.3 *BASIS FOR USE CONTROLS*

Use controls at the Dana and Fleet properties are necessary to protect future site workers and construction workers. A use control will ensure that the properties are not used for any purpose other than industrial unless it is demonstrated to USEPA that another use will not pose a threat to human health or the environment and USEPA provides prior written approval for such use.

<u>Protection of Site Workers</u>

Use controls are necessary to protect site workers as follows:

1. Shallow ground water beneath both properties shall not be used for potable purposes or any other use that could result in human exposure;
2. Well drilling is prohibited at both properties without prior USEPA approval, to prevent inadvertent exposure to the contaminated ground water; and
3. A vapor control system at the Fleet property shall be installed in each new structure constructed at the property to prevent inadvertent exposure to the vapors.

<u>Protection of Construction Workers</u>

Use controls are necessary to protect construction workers as follows:

1. All earth moving activities on the property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance

with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP.

2.4 *PROPERTY INFORMATION AND STAKEHOLDER CONTACTS*

FMC sold the former Agricultural Products Group Facility North Parcel property in December 2020 to NorthPoint Development LLC for redevelopment. FMC, the responsible party and Permittee under the Permit for Corrective Action (Permit) (EPA ID No. MDD0030781875) issued by the USEPA, has the address:

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104

Fleet is the current owner of the property located at 3410 Fairfield Road, Baltimore, Maryland and is listed in the land and property tax records as:

Fleet Properties LLC
3400 Fairfield Road
Baltimore, MD 21226

Dana is the current operator on the property located at 1550 Fairfield Road, Baltimore, Maryland. The property owner is listed in the land and property tax records as:

Northeast Real Property Holding of Baltimore Maryland
210 Essex Ave E
Avenue, NJ 07001

2.5 *USE CONTROL BOUNDARY*

Use controls are initially proposed to be applied to the entirety of the Dana and Fleet properties as shown on Figure 2. However, use controls may be applied to portions of the two properties that overlie impacted ground water based on input received from the two property owners. Application of use controls will accommodate the future industrial use of any part of the off-site properties, whilst ensuring the protection of human health and the environment.

3.0 IMPLEMENTATION OF USE CONTROLS

3.1 ENVIRONMENTAL COVENANT

FMC and the current property owner will request Dana and Fleet to implement the use controls through the application of a proprietary control, namely the recordation of an environmental covenant onto each property deed. In this manner, the use controls would "run with the land" so that future owners would be bound by these restrictions. In Maryland, proprietary controls are applied under the authority of the April 2005 state statute titled *Uniform Environmental Covenants Act* (UECA). UECA is codified in Maryland Environment Code §1-801 to §1-815. The law applies a nationally standardized approach to drafting, documenting and enforcing activity and use limitations on contaminated sites in Maryland. The law includes provisions for defining the content of the covenant, notice, recording and enforcement of the covenant, and notice to subsequent holders of interest. The USEPA has the authority to enforce land use restrictions contained within each environmental covenant.

UECA defines the "holder" as the grantee of the environment covenant. The grantee holds the covenant or title to the real property interest and has primary responsibility for maintaining and enforcing use controls.

The draft Environmental Covenants for the Dana and Fleet properties that conform to Maryland's UECA law are provided in Attachments A and B, respectively, and are being submitted to EPA for review and approval. The environmental covenants include the following information:

- **Holder**. Fleet and Northeast Real Property Holding of Baltimore Maryland Limited Liability Company will be the holders of their respective environmental covenants. FMC will maintain and enforce the use controls, and expend the necessary funds to maintain and enforce the controls. Further, FMC is accountable to maintaining use controls through the Permit. USEPA will be a third party beneficiary and thus will have the authority to enforce the environmental covenant.
- **Legal Description of Restricted Area**. The metes and bounds description of the Dana and Fleet properties and a map showing the property boundaries are appended to each covenant and included in Attachments A and B, respectively.
- **Use Controls for the Property**. The use controls are listed in the draft environmental covenants.
- **Executed by Regulatory Authority**. FMC, Dana, Fleet, and USEPA will need to execute the environmental covenants.

- **Maryland Department of Environment (MDE) Registry**. As described in Section 3.2.2 below, the environmental covenants, after recordation at the Baltimore City Land Records Office, need to be submitted to the MDE Registry of Environmental Covenants.

As described in Section 3.2.2 below, the environmental covenants, after recordation at the Baltimore City Land Records Office, need to be submitted to Miss Utility. The final recorded environmental covenants need to be provided to the USEPA and the Baltimore City Planning Department.

3.2 SECONDARY CONTROLS

The effectiveness of use controls can be improved if different types of controls are layered or implemented at the same time. In this case, governmental controls and informational devices are layered with the environmental covenant. The governmental controls and informational devices discussed below are considered secondary to the environmental covenant and do not preclude or diminish FMC's responsibility to maintain and enforce the environmental covenant.

3.2.1 Government Controls

The off-Site properties are located within the City of Baltimore, and as such, are subject to two government controls, namely zoning restrictions regarding land use and a prohibition on ground water use.

Zoning

The properties are located within an area that is zoned heavy industrial (M-3). M-3 zoning restricts site use to a wide variety of intense industrial uses, including manufacturing, shipping, and incinerators.

Additionally, the properties are located within the City of Baltimore's Maritime Industrial Zoning Overlay District (MIZOD, Ordinance 04-804). MIZOD was enacted in 2004 to preserve deep-water frontage of the Port of Baltimore and reserve these areas for industrial use. The MIZOD protects the Fairfield area from increased pressure to convert waterfront properties to mixed-use residential and commercial properties. Preservation is accomplished by controlling the uses in the overlay area as follows:

- Preventing conversion of properties from industrial to mixed use;
- Prohibiting hotels, motels, taverns and all other uses not permitted in an M-3 district;

- Allowing offices, businesses, and restaurants as accessory uses only.

City Health Department Prohibition on Ground Water Use

Code of Maryland Regulation (COMAR) 26.03.01.05 states "an individual water supply or individual sewerage system may not be permitted to be installed where an adequate community water or sewerage facility is available." This regulation applies to all areas within the City of Baltimore because the City provides adequate water service. The Baltimore City Health Department uses this regulation to deny a variance to use ground water, and defer requests for potable ground water use to the Maryland Department of Environment Water Management Administration (Tolson, 2013 personal communication).

3.2.2 *Informational Devices*

MDE Registry

MDE is responsible for maintaining a registry of environmental covenants and any amendment or termination of covenants under the Maryland UECA statute. The benefit of the registry is to make information regarding the use controls available on the internet to entities that are interested in locating a facility at the properties.

MDE will enter the environmental covenant information once the deed recordation is complete into its Registry of Environmental Covenants and Environmental Site Mapping System to ensure that the environmental covenant remains registered with the MDE and appears on applicable state databases. Information regarding the registry and mapping system is available at http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx .

Miss Utility

Maryland operates a one-call system called Miss Utility. Anyone who conducts intrusive activities is required by the Maryland Underground Facilities Damage Prevention Law (Miss Utility Law) to contact Miss Utility. The Maryland Underground Facilities Damage Prevention Authority (Authority) enforces the Miss Utility Law, and the members of the Authority are approved by the Governor. The creation of the Authority, which is a stakeholder-run organization, not a state agency, was approved by the statute. The law gives the Authority the power to enforce the Miss Utility Law in Maryland.

The environmental covenants for each property, after recordation at the Baltimore City Land Records Office, needs to be submitted to Miss Utility. If someone submits a ticket request to Miss Utility to conduct intrusive activities on the Dana or Fleet

properties, FMC will be notified, and FMC will be required to contact the submitter within two business days and provide them with the information regarding the scope of the use controls and to notify the property owner.

3.3 USE CONTROL RELATIONSHIP MATRIX

Table 1 summarizes the use controls and illustrates the relationship between the required use controls and how the use controls will be implemented.

3.4 IMPLEMENTATION EVENT AND DATE

The Environmental Covenant will be implemented in accordance with the following schedule:

- USEPA accepts and executes the Environmental Covenants presented in Attachment A and Attachment B – date to be determined;
- Dana, Fleet, and FMC begin full compliance with the Environmental Covenants - upon USEPA execution of the covenants;
- Dana, Fleet, and FMC submit the fully executed Environmental Covenants to the Baltimore City Land Records Office for recordation on the property deeds – within 30 days of receipt of the signed Environmental Covenant from USEPA;
- Dana, Fleet, and FMC submit the fully executed and recorded Environmental Covenants to the USEPA, Baltimore City Planning Department, the MDE Environmental Covenant Registry, and Miss Utility – within 30 days of receipt of the recorded Environmental Covenant from the Baltimore City Land Records Office; and
- FMC reports to USEPA in the Annual Progress Report (see Section 4.1) monitoring actions taken to ensure compliance with off-site use controls and any actions taken to rectify non-compliance - by 30 January of each year starting upon execution of the Environmental Covenants.

4.0 MONITORING, REPORTING AND ENFORCEMENT

4.1 MONITORING AND REPORTING

Monitoring

FMC, in coordination with the current property owner, will be responsible for monitoring the activities and development at the properties to ensure compliance with the use controls. Monitoring will ensure that use controls: 1) remain in place; 2) are adhered to; and 3) remain effective at protecting human health, the environment, and the remedy. FMC will establish the authority to inspect the operations of off-site users for compliance with use controls, including the ability to enter buildings or restricted areas, in lease or sale agreements. FMC will define requirements for submittals of engineering designs related to vapor control systems and earth moving activities in lease or sale agreements.

FMC will conduct the monitoring activities listed below.

- **Annual Inspection**. A comprehensive annual inspection will be conducted to evaluate the status of the off-site use controls and identify whether deficiencies or inconsistencies with the off-site use controls exist. The annual inspection will include meeting with individual users of the Dana and Fleet properties, making inquiries to the users regarding operations and use of the properties, and physical inspection of the buildings and properties. An inspection report will be completed to document the findings. Specifically, the annual inspection will verify that:
    - No wells have been installed that were not approved by USEPA (only FMC will install wells related to the remediation of ground water);
    - Ground water is not being used for potable purposes;
    - No buildings on-site are being used for any purpose other than industrial use (i.e., no dormitory or overnight accommodations are being provided);
    - Earth moving activities including construction and drilling that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120, and the work shall be conducted under the direction of a HASP;
    - With respect to the Fleet property, vapor control systems approved in advance by the USEPA are installed and being maintained properly in accordance with the maintenance and inspection procedures described in the CMI Work Plan.

- **Periodic Inspections**. Periodic inspections or meetings will be conducted throughout the year when actions are proposed on the Dana and/or Fleet properties that could compromise the integrity of an off-site use control and warrant reassessment of the effectiveness of the off-site use controls. FMC will coordinate with the current land owners to require Dana and Fleet property users, in either current or future lease or sale agreements pertaining to the properties, to notify FMC in a timely manner of triggering events, and to provide sufficient information to support the inspection and review of the proposed event. An inspection report will be completed to document the findings. Periodic inspections will be conducted when the following triggering events occur:
    - Changes in property use are proposed, such as planned redevelopment activities or property sale;
    - New building construction or a changed use of an existing building is proposed;
    - Building alteration or demolition is proposed;
    - Earth moving activities that could potentially expose construction workers to ground water are proposed; and
    - Utility installation or repair is proposed.
- **Engineering Submittal Review**. FMC will review contractor design drawings and engineering submittals related to installation or alterations of vapor control systems, or activities that will entail disturbance of soil. Design submittals will be prepared by contractors hired by the developers.
    - **Vapor Control System.** FMC will verify that vapor control systems are designed and installed in a manner that conforms to the design specified in the CMI Work Plan. FMC will verify that the Operation and Maintenance (O&M) plan is prepared and conform to the CMI Work Plan. Once the design and O&M plans are determined to conform to the CMI Work Plan, FMC will coordinate the review and approval of the plans with USEPA. FMC will ensure that construction of the vapor controls does not proceed until USEPA approval is obtained. FMC will conduct a field inspection during the construction of the vapor control system to ensure the system is installed in accordance with the USEPA-approved design, and obtain copies of as-built drawings that document the construction of the vapor control system.
    - **Training and HASP**. FMC will verify that earth moving activities including construction and drilling that could potentially expose workers to ground water shall be completed by workers who have been OSHA 40-hour trained in accordance with 29 CFR Part 1910.120,

and the work shall be conducted under the direction of a HASP. FMC will review proposed plans for earth moving activities, and ensure that contractors performing the activities have properly health and safety trained personnel and conduct their work under the direction of the HASP.

Reporting

FMC will report each year to the USEPA the findings of the annual and periodic off-site use control monitoring in the Annual Progress Report on the corrective measures remedy performance identified in Part II.C of the Permit. The Annual Progress Report is due to USEPA by 30 January of each year. Copies of inspection reports or memoranda will be appended to the Annual Progress Report. The information presented in the Annual Progress Report will describe:

- An overall assessment of compliance of Site users with the off-site use controls;
- Specific activities conducted to design and install vapor control systems, including contractor submittals received and reviewed and references to USEPA approvals; and
- Well installation activities conducted with USEPA approval.

FMC will include in the Annual Progress Report a critical evaluation of the effectiveness of off-site use controls in protecting human health and the environment and ensuring the integrity of engineering controls. Proposed changes in the wording or content of off-site use controls will be identified as necessary. Part of this critical evaluation will include the review of the content of the CMI Plan in supporting compliance with off-site use controls, and any proposed changes to this document to improve its effectiveness.

FMC will notify USEPA in writing of any actions that require USEPA approval, including review of plans for new vapor control systems or alterations of existing vapor control systems and information regarding well installation activities.

FMC will notify USEPA in writing of any identified breaches or insufficiencies associated with compliance of off-site use controls. The initial notification will include proposed actions and a timeframe to rectify the breach or insufficiency. Actions taken to resolve non-compliance will be described in subsequent submittals to USEPA. Additionally, non-compliance with use controls will be summarized in the Annual Progress Report, and actions taken to resolve non-compliance will be described.

4.2 ENFORCEMENT

FMC, as the responsible party, has primary enforcement authority to address potential problems involving improper or incomplete implementation, maintenance or breaches of the off-site use controls. FMC is the entity that is responsible for rectifying a breach or violation of an off-site use covenant. FMC will identify any enforcement issues, and work cooperatively with the Dana and Fleet property users to rectify the non-compliance. FMC will incorporate notification requirements for changes to the off-site properties. FMC may request assistance from USEPA to enforce compliance by off-site users with off-site use controls, as described below.

USEPA holds two enforcement mechanisms for ensuring compliance with use controls. First, USEPA can request FMC at any time to take action to resolve non-compliance with off-site use controls. The obligation to implement and maintain the specified off-site use controls is enforceable by USEPA through the provisions of the Permit and, in the event of non-compliance, USEPA has the authority under the Permit to enforce compliance. As a last resort, judicial enforcement or a court order imposing the off-site use controls may be sought against a property user if off-site use controls are not complied with. Second, as a third party beneficiary to the environmental covenants, USEPA holds direct enforcement authority for off-site use controls, and can go directly to a property user to address non-compliance.

5.0 MODIFICATION AND TERMINATION

5.1 MODIFICATIONS

Off-site use controls may be modified if they are deemed to be ineffective in protecting human health, the environment, or the remedy, or are determined to be overly restrictive given improved off-site property conditions. Off-site use controls may need to change to reflect changes in site conditions. Modification of the off-site use controls will require the following steps.

1. FMC needs to make a request to USEPA for modifications, which will include an explanation as to why the off-site use control needs to be modified and propose specific modifications to the wording;
2. USEPA needs to accept the proposed modifications, or adjust the proposed modifications to satisfy their needs; and
3. FMC needs to file a revised environmental covenant to be recorded on the deed(s).

5.2 TERMINATION

Termination of off-site use controls could occur when cleanup objectives have been met such that off-site use controls are no longer required to ensure protectiveness of human health and the environment. The off-site use controls specified in the CMI Work Plan are intended to remain in-place for as long as necessary to ensure the long-term protection of the future users of the properties. Once implemented, only USEPA has the authority to terminate a use control. The use controls will remain until USEPA, in its sole discretion, determines and notifies FMC in writing that a use control is no longer necessary for the protection of human health or the environment.

REFERENCES

ERM. 2014. Supplemental Site Investigation Report for the North Parcel. Former Agricultural Products Group Facility. October 20, 2014.

ERM. 2016. Corrective Measures Implementation (CMI) Work Plan for the North Parcel, Former Agricultural Products Group Facility. 19 October 2016.

ERM. 2016a. Ground Water Monitoring Plan for the North Parcel, Appendix D to the Corrective Measures Implementation (CMI) Work Plan for the North Parcel, Former Agricultural Products Group Facility. 19 October 2016.

ERM. 2020. Annual Progress Report for 2020, Former Agricultural Products Group Facility, Baltimore, Maryland. 29 January 2021. Tolson, Clayton, 2013. Personal communication between Clayton Tolson, Baltimore City Health Department, Environmental Issues/Permits and Christina Lewis, ERM. 22 March 2013.

USEPA, 2011. Final Decision and Response to Comments, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 14 April 2011.

USEPA, 2012. Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites, EPA-540-R-09-002, December 2012.

USEPA, 2012a. Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, EPA-540-R-09-002, December 2012.

USEPA, 2013. Permit for Corrective Action, FMC Corporation, Baltimore, Maryland, EPA ID No. MDD0030781875, 30 January

FIGURES

FIGURE 1
SITE PLAN
FMC BALTIMORE,
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

ADAPTED FROM: FMC PLANT, GROUND WATER WELLS MAP LOCATION & LEGEND,DATE 1/92. DWG ID WAS 10010, OBG 1999.

W:\Spencer's Projects\Drawings\FMC\0340126\Figure 1 - Site Plan.dwg

SR/EMF - 05/24/16

ERM, INC.

FIGURE 2
MAP USE OF CONTROL BOUNDARY
FMC BALTIMORE,
FORMER AGRICULTURAL PRODUCTS GROUP FACILITY

N

LEGEND

USE CONTROL BOUNDARY

200 100 0 200

SCALE IN FEET

AERIAL SOURCE: BING MAPS, 2010

W:\Spencer's Projects\Drawings\FMC\0340126\Figure 2 – Use Control Map.dwg

SR/EMF – 09/08/16

ERM, INC.

TABLE

Table 1
Use Control Relationship Matrix
FMC Baltimore Former Agricultural Products Group Facility

			Use Control Instruments		
Use Control	**Property**	**Risk Management**	**Proprietary**	**Government**	**Informational**
Ground water shall not be used for potable purposes	Dana & Fleet	Prevent exposure to contaminated ground water	Environmental Covenants with Northeast Real Property Holding of Baltimore Maryland and Fleet designated as grantees and USEPA as approver to be recorded in Baltimore City Land Records Office	COMAR 26.03.01.05 prohibits use of individual water supply where adequate community water supply exists	MDE Environmental Covenant Registry
Well drilling is prohibited	Dana & Fleet	Prevent exposure to contaminated ground water	Environmental Covenants with Northeast Real Property Holding of Baltimore Maryland and Fleet designated as grantees and USEPA as approver to be recorded in Baltimore City Land Records Office		Miss Utility notifications; MDE Environmental Covenant Registry
Properties shall not be used for any purpose other than industrial	Dana & Fleet	Prevent residential occupancy that would change risk profile	Environmental Covenants with Northeast Real Property Holding of Baltimore Maryland and Fleet designated as grantees and USEPA as approver to be recorded in Baltimore City Land Records Office	Site is zoned M-3; Heavy Industrial	MDE Environmental Covenant Registry
Earth moving activities that may expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a HASP	Dana & Fleet	Prevent exposure to contaminated soil and ensure proper management of contaminated soil	Environmental Covenants with Northeast Real Property Holding of Baltimore Maryland and Fleet designated as grantees and USEPA as approver to be recorded in Baltimore City Land Records Office		Miss Utility notifications; MDE Environmental Covenant Registry
A vapor control system shall be installed in each new structure	Fleet	Prevent exposure to volatile vapors in a building	Environmental Covenant with Fleet designated as grantee and USEPA as approver to be recorded in Baltimore City Land Records Office		MDE Environmental Covenant Registry

ATTACHMENT A – DRAFT ENVIRONMENTAL COVENANT FOR DANA PROPERTY

DRAFT ENVIRONMENTAL COVENANT

SITE NAME: Parcel Account Number 0325077335D006
GRANTOR/OWNER/HOLDER/GRANTEE: Northeast Real Property Holding of Baltimore Maryland Limited Liability Company
PROPERTY ADDRESS: 1550 E Patapsco Ave., Baltimore, Maryland 21226

This Environmental Covenant is executed pursuant to the provisions of the Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article"). This Environmental Covenant subjects the Property identified in Paragraph l to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the United States Environmental Protection Agency ("EPA").

1. **Real Property Affected**. The real property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

The postal street address of the Property is: 1550 E Patapsco Ave., Baltimore, Maryland 21226.
The City Land Records Deed Reference: Liber MLP No. 03066, folio 0299.
Tax Account Identification Number: Ward - 25 Section - 07 Block - 7335D Lot - 006.
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.234 north -76.582 east.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. Ronald Dana/Northeast Real Property Holding of Baltimore Maryland Limited is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: 210 Essex Ave. E, Avenel, New Jersey 070001.

3. **Holder/Grantee**. For purposes of this Environmental Covenant, Ronald Dana/Northeast Real Property Holding of Baltimore Maryland Limited shall also be a Holder. The mailing address of the Holder is: 210 Essex Ave. E, Avenel, New Jersey 070001.

4. **EPA Regulatory Program Issuing Determination**. The following EPA regulatory program is responsible for having issued a determination requiring the use of this Environmental Covenant:

- Corrective Action Permit Pursuant to the Resource Conservation and Recovery Act issued to FMC Corporation (Permit No. MDD0030781875, "Permit"). The Permit requires the implementation and maintenance of the Final Remedy for the Property as selected by and described in the Final Decision and Response to Comments ("FDRTC") issued by EPA on April 14, 2011.

5. **Summary of Identified Contaminants.** The description of the contamination and remedy for the former FMC Baltimore Agricultural Products Group Facility (the "Site"), which justifies the need for the activity and use limitations described under Item No. 6, is included in the FDRTC issued by EPA on April 14, 2011. The FDRTC requires that ground water contamination on the Site be controlled to prevent migration onto adjacent properties at unacceptable concentrations. As indicated in the FDRTC, volatile organic compounds (VOCs), primarily chlorobenzene, and semivolatile organic compounds (SVOCs) have been identified across the Site in both the shallow and intermediate aquifers, as well as in a perched aquifer zone at the north. As described in the Site's Corrective Measures Implementation (CMI) Work Plan for the North Parcel, remediation of ground water quality is occurring through source removal and capping. However, additional measures are warranted to protect the health of workers on adjacent properties.

6. **Activity and Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner, Holder, and each subsequent owner and holder of the Property shall abide by:

a. Groundwater beneath the Property shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by EPA in the FDRTC;
b. Well drilling is prohibited at the Property without prior written EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the Final Remedy selected by EPA in the FDRTC;
c. The Property shall not be used for any purposes other than industrial purposes unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use; and
d. All earth moving activities on Property, including construction and drilling, that could potentially expose workers to groundwater shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a health and safety plan (HASP).

7. **Notice of Limitations in Future Conveyances**. This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying

any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner, shall notify EPA in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address, and telephone numbers of the transferee to who such interest is conveyed.

8. **Access by EPA and the Maryland Department of the Environment (Department)**. In addition to any rights already possessed by the EPA or the Department, this Environmental Covenant grants to EPA and the Department a right of access to the Property to implement or enforce this Environmental Covenant.

9. **Recordation and Filing with Registry**. FMC, on behalf of the Owner, shall record this Environmental Covenant in the Land Records Office of Baltimore City within thirty (30) days of EPA's approval of this Environmental Covenant and shall send proof of the recording to EPA and the Department within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx

10. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with §§ 1-808 or 1-809 of the Environment Article). The then-current owner agrees to provide EPA and the Department with written notice of the pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

11. **EPA's Address**.

A file-stamped copy of this Environmental Covenant shall be sent to:

Attn: Chief, Corrective Action Branch #1
U.S. EPA Region 3
1650 Arch Street
Mail Code: 3LD10
Philadelphia, PA 19103

Subsequent submissions required by this Environmental Covenant shall be sent to the Region 3 RCRA Corrective Action digital repository for institutional control and reporting documents. The documents shall reference the RCRA

Facility name and RCRA ID Number. The documents shall be submitted to: R3_RCRAPOSTREM@epa.gov

12. **The Department's Address**. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, Maryland 21230.

13. **Administrative Record**. The Administrative Record pertaining to the remedy selected by EPA in FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at the address listed above.

14. **Enforcement.** This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environmental Article. The Holder shall have the right to rectify and/or remedy any breaches of violations of the activity and use limitations set forth in Paragraph 6 above in accordance with applicable laws.

15. **Compliance Reporting**. Within twenty-one (21) days after written request by EPA or the Department, the then-current owner of the Property shall submit, to EPA, the Department and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 6 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b) noncompliance with Paragraph 6 (Activity and Use Limitations), and c) an application for a permit or other approval for any building or site work that could affect contamination on any part of the Property, the then-current owner will send a report to EPA, the Department and any Holder. The report will state whether there is compliance with Paragraph 6. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

16. **Severability.** The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year written below.

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), and EPA, in the following form:

ATTEST:

Ronald Dana/Northeast Real Property Holding of
Baltimore Maryland Limited Liability Company,
Grantor/Owner and
Holder/Grantee

Date:_____

By: _____
Name: _____
Title: _____

STATE _____)
)
COUNTY OF _____) SS:

On this_____ day of _____, 20___, before me, the undersigned, personally appeared _____, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(***Name of notary public typewritten or printed***)
Notary Public

My commission expires: _____

DRAFT

APPROVED, by United States Environmental Protection Agency, Region III

Date: _____ By: _____ (Signature)
_____ (Name)
_____ (Title)
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA
)
)
COUNTY OF _____) SS:

On this_____ day of _____, 20___, before me, the undersigned, personally appeared_____, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(***Name of notary public typewritten or printed***)
Notary Public

My commission expires: _____

DRAFT

EXHIBIT A
METES AND BOUNDS DESCRIPTION

WARD 25, SECTION 07, BLOCK 7335D, LOT 006 IN BALTIMORE CITY, MARYLAND

All of those lots or parcels of land located in Baltimore City, Maryland, and more particularly described as follows:

Parcel One

Beginning for the first at the end of the fourth line of the parcel of land described in the deed from Marietta E. Crisp and others to U.S. Industrial Alcohol Co. of West Virginia, dated August 4, 1919 and recorded among the Land Records of Baltimore City in Liber S.C.L. No. 3423, folio 378, etc., said place of beginning being also at the end of the first line of the parcel of land described in the deed from U. S. Industrial Chemical Company Incorporated, to the Baltimore and Ohio Railroad Company, dated April 30, 1919 and recorded in said Land Records in Liber S.C.L. No. 3393, folio 231, etc., said place of beginning being also at the distance of 1624.56 feet southwesterly from the intersection of said first line of said last mentioned parcel of land with the southwest side of Fairfield Road 50 feet wide, formerly called School House Lane as widened on the southwest side thereof by deed dated May 6, 1917 from the U. S. Industrial Chemical Company to The County Commissioners of Anne Arundel County, and running thence binding reversely on the outlines of the parcel of land described in said deed from Marietta E. Crisp and others to U. S. Industrial Alcohol Company of West Virginia the two following courses and distances, as now surveyed, North 29 degrees 16 minutes West 143 feet and North 18 degrees 1 minute West 403.32 feet to the end of the fifth line of the parcel of land described in the deed from U. S. Industrial Alcohol Company of West Virginia to the Prudential Oil Company of Delaware, dated February 28, 1923 and recorded among the Land Records of Baltimore City, in Liber S.C.L. No. 3975, folio 539, etc., thence binding on part of said Line reversely and parallel with and distant 600 feet southeasterly, measured at right angles, from the southeast side of Chesapeake Avenue 50 feet wide, formerly called Fourth Avenue as laid down on the Plat of Fairfield, North 73 degrees 17 minutes East 175 feet, thence for line of division at right angles to said last described line, South 16 degrees 43 minutes East 529.05 feet, to a point 15 feet northerly from the hereinbefore mentioned first line of the parcel of land described in said deed from the U. S. Industrial Chemical Company, Incorporated to the Baltimore and Ohio Railroad Company thence still for line of division South 60 degrees 23 minutes 40 seconds West 64.62 feet to intersect said hereinbefore mentioned first line of the parcel of land described in said deed from the U. S. Industrial Chemical Company Incorporated, to the Baltimore and Ohio Railroad Company and thence binding on part of said line and also reversely on part of the fifth line of the hereinbefore mentioned parcel of land described in said deed from Marietta E. Crisp and others to the U. S. Industrial Alcohol Company of West Virginia as now surveyed,

South 73 degrees 49 minutes West 71.79 feet to the place or beginning; containing 2-050/1000 acres of land more or less.

Parcel Two

Beginning for the second at a point in the fifth line of the parcel of land described in the deed from the U.S. Industrial Alcohol Company of West Virginia to the Prudential Oil Company of Delaware, dated February 28, 1923 and recorded among the Land Records of Baltimore City in Liber S.C.L. No. 3975, folio 539, etc., distant 175 feet northeasterly from the end of said line, and running thence binding on a part of said line reversely, and parallel with and distant 600 feet southeasterly, measured at right angles, from the southeast side of Chesapeake Avenue 50 feet wide, formerly called Fourth Avenue, as laid down on the plat of Fairfield, North 73 degrees 17 minutes East 412.92 feet, thence for line of division binding on the division fence there situate as now surveyed, South 14 degrees 17 minutes East 503.42 feet, thence leaving said fence and still for line of division as now surveyed, South 66 degrees 37 minutes 20 seconds West 357.07 feet to intersect the first line of the Parcel of land described in the deed, from the U. S. Industrial Chemical Company, Incorporated, to the Baltimore and Ohio Railroad Company, dated April 30, 1919 and recorded among said land records in Liber S.C.L. No. 3393, folio 231, etc., at a point distant 171.67 feet northeasterly from the end of said line, thence binding on part of said line and also reversely on part of the fifth line of the parcel of land described in the deed from Marietta E. Crisp and others to the U. S. Industrial Alcohol Company of West Virginia, dated August 4, 1919 and recorded among said Land Records in Liber S.C.L. No. 3423, folio 378, etc., South 73 degrees 49 minutes West 99.88 feet; thence for line of division North 60 degrees 23 minutes 40 seconds East 64.62 feet to intersect a line drawn from the place of beginning southeasterly at right angles to the hereinabove mentioned fifth line of the parcel of land described in said deed from the U. S. Industrial Alcohol Company of West Virginia to the Prudential Oil Company of Delaware at a point on said line so drawn distant 15 feet northwesterly from the hereinbefore mentioned first line of the parcel of land described in said deed from the U. S. Industrial Chemical Company, Incorporated, to the Baltimore and Ohio Railroad Company, and thence reversing the line so drawn and binding thereon North 16 degrees 43 minutes West 529.05 feet to the place of Beginning, Containing 4-785/1000 acres of land, more or less. The courses in the above description are referred to the True Meridian of the Topographical Survey of Baltimore City.

Parcel Three

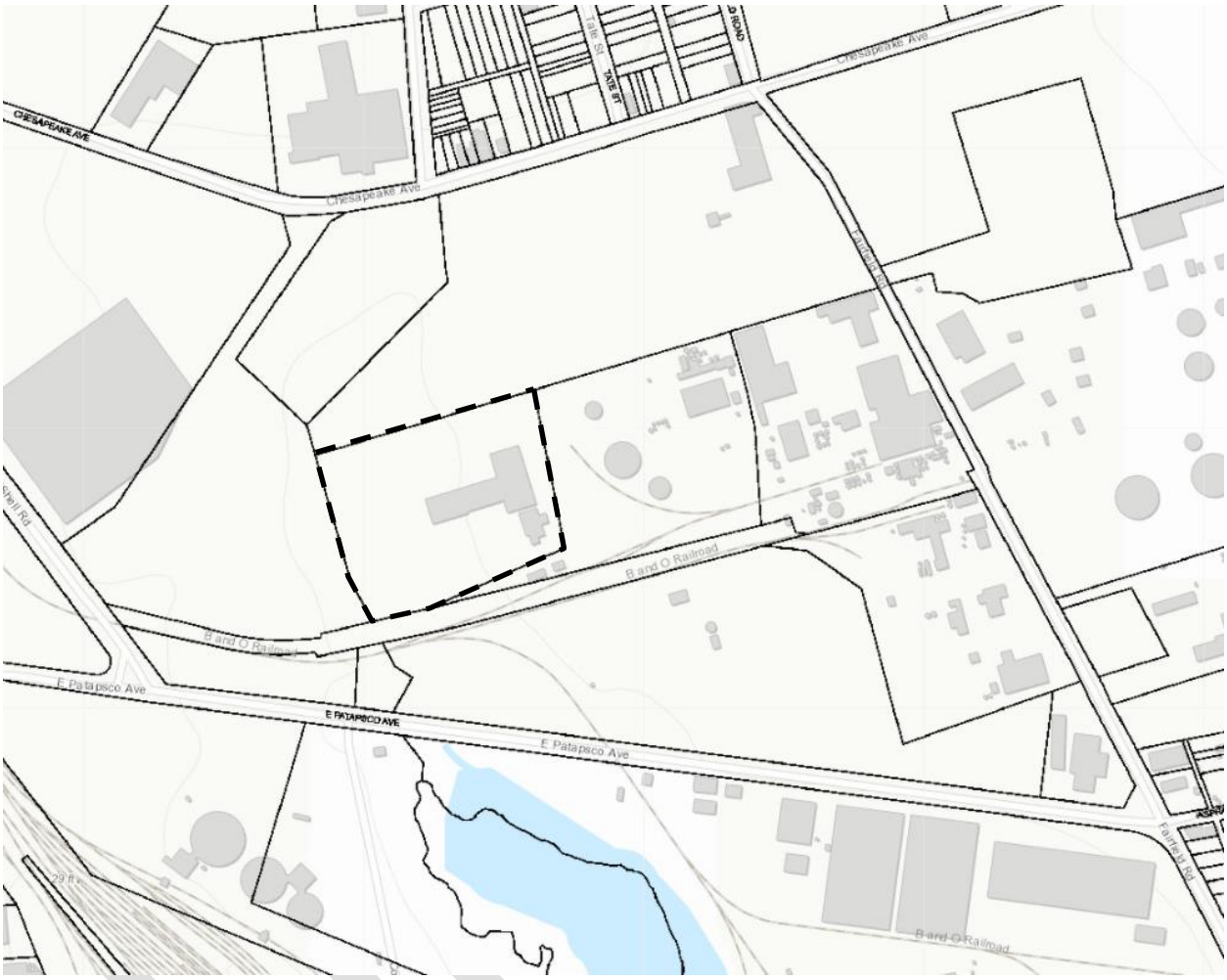
Beginning for the third on the north side of Patapsco Avenue, as now open 60 feet wide, at the point where said side of Patapsco Avenue intersects the North 28 degrees 30 minutes East 10-1/4 perches line of the parcel of land described in the deed from the Mikado Fishing and Pleasure Club of Baltimore City to the Baltimore and Ohio Railroad Company, dated February 21, 1918 and recorded among the land Records of Anne Arundel County, in Liber

G.W. No. 147, folio 261, etc., said place of beginning being at the distance of 1932 feet westerly from the northwest corner of Patapsco Avenue and Fairfield Road, formerly called School House Lane, as widened on the southwest side thereof, by deed dated May 6, 1917 from the U. S. Industrial Chemical Company to the County Commissioners of Anne Arundel County, and, running thence binding on the north side of Patapsco Avenue, North 82 degrees 35 minutes West 120 feet; thence binding on a line drawn northerly from said last mentioned point to the end of the first line of the parcel of land & described in the deed from U. S. Industrial Chemical Company, Incorporated, to the Baltimore and Ohio Railroad Company, dated April 30, 1919, and recorded among the Land Records of Baltimore City in Liber S.C.L. No. 3393, folio 231, etc., as now surveyed, North 5 degrees 18 minutes East 143.73 feet to interest the second line of the parcel of land described in the deed from the Mikado Fishing and Pleasure Club to the Baltimore and Ohio Railroad Company, dated November 17, 1915 and recorded among the Land Records of Anne Arundel County, in Liber G.W. 122, folio 212, etc., thence binding on part of said second line reversely, North 74 degrees 59 minutes East 43.20 feet to the beginning of said second line, and to intersect the North 27 degrees 45 minutes West 18 perches line of the parcel of land described in the first hereinabove mentioned deed from The Mikado Fishing and Pleasure Club of Baltimore City to the Baltimore and Ohio Railroad Company; thence binding reversely on part of said line, South 29 degrees 16 minutes East 82.59 feet to the beginning of said line; and thence still binding reversely on the outlines of said parcel of land, and on the outlines of the land of the U. S. Industrial Chemical Company, the two following courses and distances, South 65 degrees 31 minutes East 61.83 feet, and South 24 degrees 21 minutes West 79.17 feet to the place of beginning. Containing 16,088 square feet or 369/1000 of an acre of land, more or less. The courses in the above description are referred to the True Meridian of the Topographical Survey of Baltimore City.

Tax Parcel Numbers: 25-07-7335D-002; 25-07-7335D-006

Known as 1550 East Patapsco Avenue, Baltimore City, Maryland

EXHIBIT B
MAP OF PROPERTY



Property Line (Source: https://gisapps.dnr.state.md.us/MERLIN/index.html)

ATTACHMENT B – DRAFT ENVIRONMENTAL COVENANT FOR FLEET PROPERTY

DRAFT ENVIRONMENTAL COVENANT

SITE NAME: Parcel Account Number 0325077335D004
GRANTOR/OWNER/HOLDER/GRANTEE: Fleet Properties, LLC
PROPERTY ADDRESS: 3410 Fairfield Road, Baltimore, Maryland 21226

This Environmental Covenant is executed pursuant to the provisions of the Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article"). This Environmental Covenant subjects the Property identified in Paragraph l to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the United States Environmental Protection Agency ("EPA").

1. **Real Property Affected**. The real property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

The postal street address of the Property is: 3410 Fairfield Road, Baltimore, Maryland 21226.
The City Land Records Deed Reference: Liber MLP No. 03179, folio 029.
Tax Account Identification Number: Ward - 25 Section - 07 Block - 7335D Lot - 004.
The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.236 north -76.580 east.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. Fleet Properties, LLC is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: 3400 Fairfield Road, Baltimore, Maryland 21226.

3. **Holder/Grantee**. For purposes of this Environmental Covenant, Fleet Properties, LLC shall also be a Holder. The mailing address of the Holder is: 3400 Fairfield Road, Baltimore, Maryland 21226.

4. **EPA Regulatory Program Issuing Determination**. The following EPA regulatory program is responsible for having issued a determination requiring the use of this Environmental Covenant:

- Corrective Action Permit Pursuant to the Resource Conservation and Recovery Act issued to FMC Corporation (Permit No. MDD0030781875, "Permit"). The Permit

requires the implementation and maintenance of the Final Remedy for the Property as selected by and described in the Final Decision and Response to Comments ("FDRTC") issued by EPA on April 14, 2011.

5. **Summary of Identified Contaminants.** The description of the contamination and remedy for the former FMC Baltimore Agricultural Products Group Facility (the "Site"), which justifies the need for the activity and use limitations described under Item No. 6, is included in the FDRTC issued by EPA on April 14, 2011. The FDRTC requires that ground water contamination on the Site be controlled to prevent migration onto adjacent properties at unacceptable concentrations. As indicated in the FDRTC, volatile organic compounds (VOCs), primarily chlorobenzene, and semivolatile organic compounds (SVOCs) have been identified across the Site in both the shallow and intermediate aquifers, as well as in a perched aquifer zone at the north. As described in the Site's Corrective Measures Implementation (CMI) Work Plan for the North Parcel, remediation of ground water quality is occurring through source removal and capping. However, additional measures are warranted to protect the health of workers on adjacent properties.

6. **Activity and Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner, Holder, and each subsequent owner and holder of the Property shall abide by:

a. Groundwater beneath the Property shall not be used for potable purposes or any other use that could result in human exposure, unless such use is required by the Final Remedy selected by EPA in the FDRTC;
b. Well drilling is prohibited at the Property without prior written EPA approval, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the Final Remedy selected by EPA in the FDRTC;
c. The Property shall not be used for any purposes other than industrial purposes unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;
d. All earth moving activities on Property, including construction and drilling, that could potentially expose workers to ground water shall be completed by workers who have been Occupational Safety and Health Administration (OSHA) 40-hour trained in accordance with 29 Code of Federal Regulations (CFR) Part 1910.120, and the work shall be conducted under the direction of a health and safety plan (HASP);
e. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each new structure constructed at the facility unless it is demonstrated to EPA that vapor intrusion does not pose a

threat to human health and EPA provides prior written approval that vapor intrusion control system is not needed.

7. **Notice of Limitations in Future Conveyances**. This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner shall notify EPA in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address, and telephone numbers of the transferee to who such interest is conveyed.

8. **Access by EPA and the Maryland Department of the Environment (Department)**. In addition to any rights already possessed by the EPA or the Department, this Environmental Covenant grants to EPA and the Department a right of access to the Property to implement or enforce this Environmental Covenant.

9. **Recordation and Filing with Registry**. FMC, on behalf of the Owner, shall record this Environmental Covenant in the Land Records Office of Baltimore City within thirty (30) days of EPA's approval of this Environmental Covenant and shall send proof of the recording to EPA and the Department within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

http://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/ueca.aspx

10. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with §§ 1-808 or 1-809 of the Environment Article). The then-current owner agrees to provide EPA and the Department with written notice of the pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

DRAFT

11. EPA's Address.

A file-stamped copy of this Environmental Covenant shall be sent to:

Attn: Chief, Corrective Action Branch #1
U.S. EPA Region 3
1650 Arch Street
Mail Code: 3LD10
Philadelphia, PA 19103

Subsequent submissions required by this Environmental Covenant shall be sent to the Region 3 RCRA Corrective Action digital repository for institutional control and reporting documents. The documents shall reference the RCRA Facility name and RCRA ID Number. The documents shall be submitted to: R3_RCRAPOSTREM@epa.gov

12. The Department's Address. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, Maryland 21230.

13. Administrative Record. The Administrative Record pertaining to the remedy selected by EPA in FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at the address listed above.

14. Enforcement. This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environmental Article. The Holder shall have the right to rectify and/or remedy any breaches of violations of the activity and use limitations set forth in Paragraph 6 above in accordance with applicable laws.

15. Compliance Reporting. Within twenty-one (21) days after written request by EPA or the Department, the then-current owner of the Property shall submit, to EPA, the Department and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 6 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b) noncompliance with Paragraph 6 (Activity and Use Limitations), and c) an application for a

permit or other approval for any building or site work that could affect contamination on any part of the Property, the then-current owner will send a report to EPA, the Department and any Holder. The report will state whether there is compliance with Paragraph 6. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

16. Severability. The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year written below.

DRAFT

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), and EPA, in the following form:

ATTEST:

Fleet Properties, LLC, Grantor/Owner and Holder/Grantee

Date:_____ By: _____
Name: _____
Title: _____

STATE OF MARYLAND)
)
COUNTY OF _____) SS:

On this_____ day of _____, 20___, before me, the undersigned, personally appeared _____, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(***Name of notary public typewritten or printed***)
Notary Public

My commission expires: _____

DRAFT

APPROVED, by United States Environmental Protection Agency, Region III

Date: _____ By: _____ (Signature)
_____ (Name)
_____ (Title)
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA
)
)
COUNTY OF _____) SS:

On this_____ day of _____, 20___, before me, the undersigned, personally appeared _____, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(***Name of notary public typewritten or printed***)
Notary Public

My commission expires: _____

DRAFT

EXHIBIT A
METES AND BOUNDS DESCRIPTION

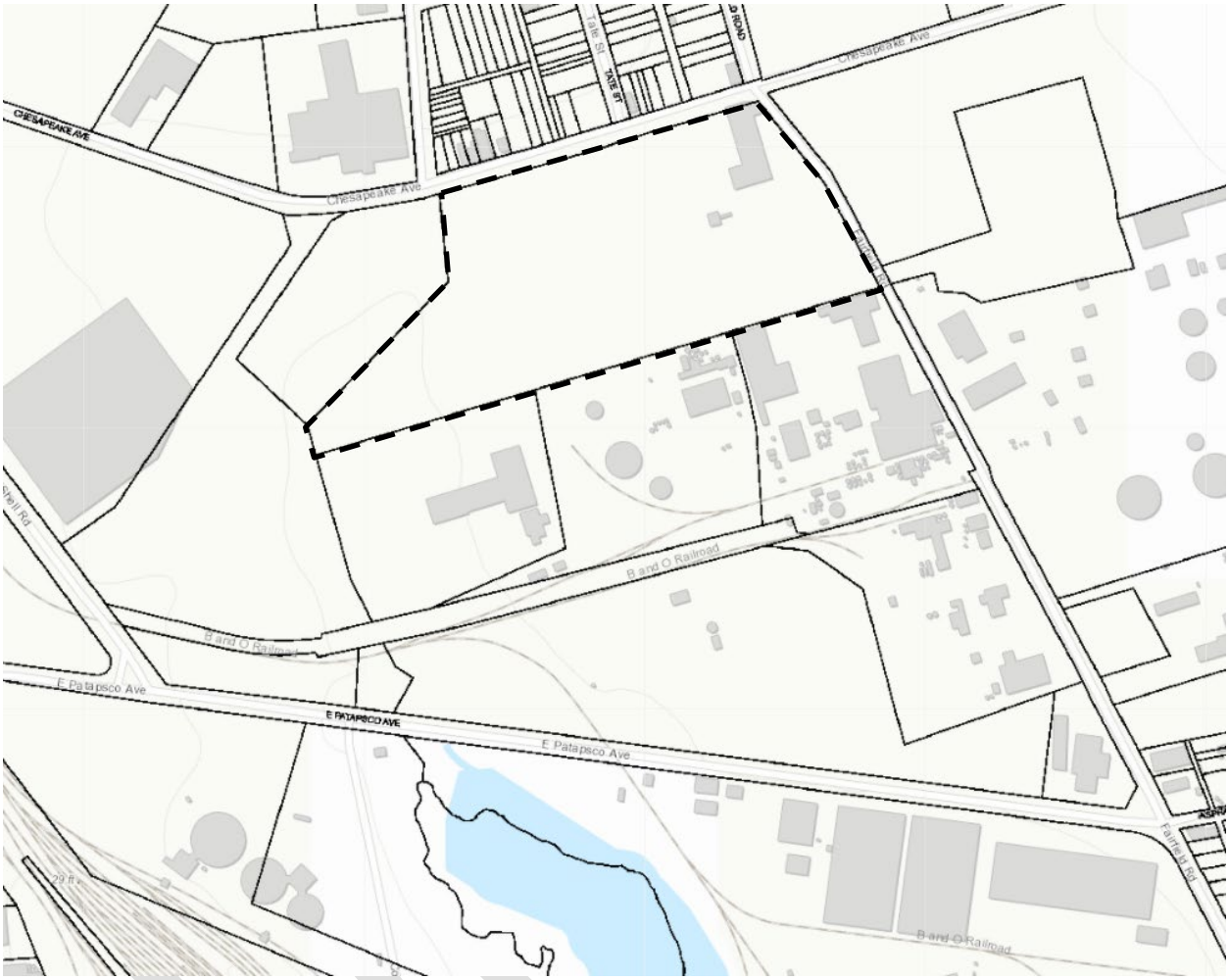
WARD 25, SECTION 07, BLOCK 7335D, LOT 004 IN BALTIMORE CITY, MARYLAND

BEGINNING for the at a large dressed stone marked with the letter "A" planted at the end of the first line of lot no. 2 in the division of Richard Crisp's estate in 1857, said stone being also at the beginning of the tract of land heretofore conveyed by Marietta E. Crisp and others to the U.S. Industrial Alcohol Co., by deed dated August 4, 1919, and recorded among the land records of Baltimore City in liber SCL no. 3423, folio 378, etc.; thence N 0º 04', 161.25 feet to the southernmost side of Chesapeake Avenue (formerly Fourth Avenue), as laid out 50 feet wide on the plat of Fairfield; thence N 79º 00' E along the southernmost side of Chesapeake Avenue, 944.42 feet to the southwest side of Fairfield Road (formerly Seventh Street); thence S 33º 31' E along the southwest side of Fairfield Road, 304.75 feet; thence S 22º 35' E continuing along Fairfield Road, 325.08 feet to a point located 600 feet southerly from and measured at right angles to the southernmost side of Chesapeake Avenue; thence S 79º 00' W, 1,571.83 feet to intersect the third line of the tract of land above referred to; thence along said tract of land N 12º 24' W, 57.08 feet; thence N 38º 40' E, 543.25 feet; thence N 7º 14' W, 33.00 feet to the point of beginning.

Thus described lot contains 17.077 acres.

DRA

EXHIBIT B
MAP OF PROPERTY



Property Line (Source: https://gisapps.dnr.state.md.us/MERLIN/index.html)