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Memo

To: Michelle Kaysen / USEPA

From: Tony Delano
Russ Johnson

cc: Dan Sullivan / NIPSCO

Date: November 21, 2018

Subject: SWMU 15 ISS Constructability Assessment
NIPSCO Bailly Generating Station

INTRODUCTION

Beginning in 2005, a Resource Conservation and Recovery Act (RCRA) Facility Investigation was implemented at the Bailly Generating Station (BGS), located at 246 Bailly Station Road in Chesterton, IN. The Site is divided into Areas A, B and C. Area C includes Solid Waste Management Unit (SWMU) 15 (see Figure 1), a low-lying area that was backfilled with coal combustion residuals (CCR), primarily fly ash. Placement of CCR at SWMU 15 ceased in 1979, and the area was covered. A Draft Area C Corrective Measures Study (CMS) Report was issued in August 2015, which recommended encapsulation of the CCR at SWMU 15. In response to EPA comments dated December 3, 2015, a Revised Draft Area C CMS Report was filed on March 18, 2016 (Revised Draft CMS Report, Amec Foster Wheeler 2016). The revised report maintained encapsulation as the recommended corrective measure for SWMU 15, comprised of a perimeter slurry wall installed to the underlying confining clay layer where present and an engineered, impermeable cover. To further evaluate the corrective measure options, a geotechnical investigation was completed in July, August and September 2016. Findings from that investigation were documented in a memorandum to EPA dated January 23, 2017 (Amec Foster Wheeler, 2017a). In the conclusions of that memo Northern Indiana Public Service Company (NIPSCO) proposed to revise the conceptual designs and associated cost estimates in a separate memo to EPA for: (1) encapsulation, (2) full excavation for off-site disposal, and (3) partial excavation for off-site disposal with in situ stabilization and solidification (ISS) of CCR left below the water table. Revised costs were presented in a memorandum dated June 2, 2017 (Amec Foster Wheeler, 2017b). As detailed in the revised Recommendation section of that memo, based on the geotechnical investigation findings and the cost re-evaluation, NIPSCO changed its prior recommendation of encapsulation to partial excavation with ISS for SWMU 15.

EPA also recommended that NIPSCO perform ISS feasibility evaluations using both the Synthetic Precipitation Leaching Procedure (SPLP; EPA Method 1312) and the EPA's Method 1315 "Mass Transfer Rates of Constituents in Monolithic or Compacted Granular Materials Using a Semi-Dynamic Tank Leaching



Procedure" to better evaluate ISS effectiveness and determine the dominant mechanism in leachate retardation (i.e. geochemical stabilization or physical solidification). In a memo dated September 18, 2017 (Amec Foster Wheeler, 2017c), NIPSCO provided responses to each comment, including an agreement that additional bench-scale testing of the unconsolidated and solidified CCR using LEAF methods and durability testing would be performed.

Implementability Evaluation

ISS is a well-established technology that has been in use for decades at a variety of sites (ITRC 2011), including MGP sites, CCR sites, metals, and other organics-contaminated sites. The technology has been applied above and below the water table, and is a commonly accepted remedy within state, RCRA, and Superfund programs. A further review of ISS technology has been provided in the Revised Draft CMS Report and the March 18, 2016 responses to USEPA comments on the Draft CMS Report.

In a September 22, 2017 e-mail, USEPA commented that the implementability of the revised preferred remedy (ISS and excavation) would need to be assessed in more detail (see Attachment A). This memo provides that assessment, including an evaluation of the feasibility of excavation of materials present above the water table and the ISS of materials beneath the water table given site constraints, how the ISS work would be divided into management and mixing cells, how water would be managed, how proper curing would be ensured, how consistent mixing of the reagent would be conducted in the field, and how sufficient mixing of the reagents into the subsurface would be ensured.

Data Sources and Assumptions

This constructability memo has been developed primarily from the following sources of information:

- Revised Draft Area C Correct Measures Study (Amec Foster Wheeler, 2016)
- Treatability Study (Kemron 2018 and Wood 2018)
- Site Walk and Constructability Assessment conducted with Lang Tool Co. (December 2017)

The bench scale ISS treatability study findings (Wood, 2018) showed that 6% Portland cement meets strength requirements and provides the best hydraulic conductivity performance of all the mixtures evaluated with a result of 2×10^{-7} cm/sec after 59 days of curing, which is slightly higher than the target of 1×10^{-7} cm/sec. It is anticipated that the hydraulic conductivity will continue to decline with additional curing time.

In addition, this amendment reduced boron leachability by a factor of 6 as measured by USEPA Method 1315 (solidified monolith) compared to the unconsolidated CCR leachate concentration using EPA Method 1316. The Method 1315 testing also produced interval mass flux values and cumulative mass released for boron. The cumulative mass release plot for boron begins to take on an asymptotic curvature. This indicates that less and less boron is diffusing through the outer surface of the solidified mass into the water bath for each successive time interval. Finally, the sequestering aspect of the formulations tested were evaluated using the SPLP (EPA Method 1312). The solidified CCR molds were crushed to expose fresh, unweathered surfaces and then tested as a granular material. The Method 1312 boron results (crushed monolith) were approximately 5 times lower than the unconsolidated CCR (Method 1316). The 6% Portland cement provided the best overall performance based on EPA method 1315 long-term leachability and contaminant flux analysis, given the overall balance of availability, safety, cost, and contractor experience with Portland cement.

For purposes of this analysis, an admixture of 6% Portland cement was selected (on a dry reagent weight to wet waste material weight basis) because it is a quantifiable amount based on the treatability study results. The actual amount of Portland cement to be added may be anywhere between 3% and 6% and will be based on targeted additional treatability studies that may be conducted during the pre-design, design, or pre-construction phase of the project to optimize the percentage of Portland cement, or potentially a more favorable formulation.

The ISS technology evaluated was the Lang Tool Co. dual axis blender mixing equipment, although other equipment types would be suitable for the work as well. The dual-axis blender is mounted on an excavator arm, which is capable of rotating along both horizontal and vertical axes, providing superior mixing control and accuracy. In addition, this type of equipment being mounted on an excavator has lower overhead clearance than auger type mixers, which rotate only along a vertical axis. The dual axis blender has been used successfully on other CCR projects, MGP sites, ISCO projects for injection of oxidants, and blending of stabilizing agents for sediments.

Site Walk

A site walk of SWMU15 was conducted in December 2017 with Wood, Lang Tool, and NIPSCO personnel. Based upon the conditions observed at the time of the site walk, SWMU15 is conducive to both excavation via traditional methods and ISS.

Access to SWMU15 is good, being immediately adjacent to the main access road to the BGS. SWMU15 is generally flat and either unvegetated or has only grasses or small shrubs. Clearing work would be minimal and the site is generally dry within the work area. The southern portion of SWMU15 has a layer of steel mill slag which is an excellent working surface for construction equipment particularly for staging areas. Most areas of SWMU15 appear to be easily accessible by traditional construction equipment which will be used for excavation activities. In addition, ISS has the advantage that, when subgrade conditions are wet and/or have low bearing capacity, the ISS mixing equipment can be staged on completed cells, which will have ample bearing capacity following curing of the cement/waste mix. Typically, mixed cells can be accessed within 24 hours, and in some cases within several hours depending on the cement curing process and other factors such as amendment ratios and material types.

Rail Sidings

Two rail sidings run parallel to the western border of SWMU 15 between the proposed area of remediation and the access road to the BGS (Figure 1). A fence separates SWMU15 from the railroad tracks along the entire border. Two at-grade crossings are present to allow access to the site at the southern end and the northwestern corner of SWMU15. The rail sidings are outside of the limits of CCR by approximately 40 feet except for at the northern half of SWMU15, where the CCR limits appear to be much closer to the rails. In this area, the CCR thickness is generally less than 4 feet and above the water table. No ISS is proposed near the rail sidings. Excavation of unsaturated materials in this area can be managed through "slot" excavation techniques – minimizing the open area at any given time followed by immediate backfilling. Allowable setbacks and excavation procedures would be determined as part of design.

Overhead Clearance

A significant concern for work to be conducted at SWMU15 is the presence of high voltage transmission lines and lower voltage distribution lines. The line heights were surveyed by DLZ (see Attachment B).

Based on the site walk, personnel from Lang Tool Co. felt that there would be no concerns with the height of their proposed equipment relative the height/location of the power lines. Survey information collected in September 2016 by DLZ Industrial, LLC indicates that the very high voltage transmission lines have a minimum clearance of roughly 35 feet, and in most cases the power lines are at least 40 feet above the ground surface for initial excavation work. This clearance is not expected to present any concerns for the equipment likely to be used for either ISS or excavation. The lower voltage distribution lines cross the site with a clearance of 29 feet, which also generally should not present any concerns with the planned equipment, both for initial excavation activities and ISS work. Based on an initial review of the power lines, the minimum clearance for all lines is 15 feet. The high voltage lines are 138 Kv, which allows for a clearance of 15 feet in accordance with OSHA¹ and the NIPSCO Contractor Health and Safety Manual. As part of design, a detailed review of the power lines at SWMU15 will be conducted and allowable setbacks and insulation techniques determined. In addition, it may be possible to turn off or redirect power from one set of power lines to another during work in that vicinity based upon the current output of the power plant. These potential approaches will need to be evaluated during design.

Typical excavation equipment to be used for the excavation and off-site disposal portion of the remedy might include a 300-series or 400-series Komatsu standard reach excavator or similar. In normal digging mode, this equipment will have a maximum boom height of approximately 6 to 7 meters (20 to 23 feet); however, the equipment can be operated with the boom lower. For most of the site this will provide acceptable clearance. Where clearance is less than 15 feet, bulldozers can be used directly under the power lines to push material a safe distance away for loading by an excavator. For the lowest known clearance of 29 feet, equipment directly beneath this portion of the line would need to be no more than 14 feet in height. This work could be accomplished with a bulldozer.

Because ISS work will be conducted after the initial unsaturated CCR material is removed, the work will be conducted at a starting elevation that is generally at least 4 feet lower and as much as 10 feet lower than initial ground surface elevations, increasing available clearances from the electrical lines.

In conclusion, access to SWMU15 is generally good and favorable for the proposed construction equipment. SWMU15 does not present any major concerns related to the presence of water or utilities, despite the presence of high voltage lines. Access does not present any unusual challenges for either excavation or ISS activities; however, timing will be required to accommodate rail traffic.

Remediation Areas, Volumes, Depths, and Thicknesses

The "SWMU 15 Geotechnical Investigation Summary" memo dated January 13, 2017 (Amec Foster Wheeler 2017a) provides the latest volume estimates based on the most recent set of data collected and used in the EVS 3D visualization software. The total estimated volume of material requiring remediation is 178,000 cubic yards (cy), of which 92,000 cy are above the water table (to be excavated and disposed of off-site) and 86,000

¹ <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1408>

cy are below the water table (to be treated via ISS). Some segregation and reuse of the unsaturated soils is anticipated, reducing the amount of material to be taken offsite for disposal.

The key site characteristics that effect construction means and methods include the following:

- thickness of unsaturated material to be disposed of off-site;
- elevation of the working surface at which the ISS equipment would begin working on the saturated CCR; and
- thickness of saturated CCR and terminal elevations for the ISS work (generally slightly below the CCR to ensure complete treatment).

A series of figures was prepared to support this evaluation and visually depict these key characteristic for ISS and excavation work to be conducted. These figures include:

- Figure 2 – depicts ground surface elevation contours, site features, CCR limits, and cross-section orientation (see Attachment B for the survey conducted by DLZ, which also includes overhead power line elevations)
- Figure 3 - Groundwater elevation contours within SMWU-15, extracted from the EVS model
- Figure 4 - Bottom of CCR elevation contours, extracted from the EVS model
- Figures 5, 6, and 7 – cross-sections depicting the locations of the ground surface, groundwater table, material to be excavated, and material to be treated vis ISS.
- Figure 8 – CCR thickness plan view (note this includes material at the surface which is not CCR and may be segregated and handled separately and potentially reused on the site as fill material).
- Figure 9 – CCR/Soil thickness to be removed via excavation (note this includes material at the surface which is not CCR and may be segregated and handled separately and potentially reused on the site as fill material)
- Figure 10 – CCR thickness present beneath the water table – the targeted material for ISS.

Existing ground surface information was obtained from the DLZ survey (see Attachment B). Both the groundwater contours and the CCR elevation contours were extracted from the EVS model and used to develop thickness of above and below water table CCR.

Pre-Design Investigation

As per the CMS, prior to design, a detailed direct-push boring study will be conducted to more accurately define the limits and depths of the CCR. This information will be used to develop target elevations for excavation and for each cell to be treated via ISS. The direct-push study will be conducted using a grid approximately 25 feet on center and will be used to identify the bottom of the CCR material. This frequency would result in approximately 1,024 borings advanced through CCR into the underlying native material. Samples will be collected and visually inspected to determine the depth of CCR and the terminal elevation for ISS. This approach will minimize the possibility of some CCR material being “missed” by the ISS treatment.

Excavation

In general, excavation will precede ISS to create sufficient space to initiate ISS and will progress slightly ahead of ISS so that large areas are not open for extended periods of time. SWMU15 is large enough to allow simultaneous operations of excavation, ISS, off-site hauling of material, and backfill/restoration of

completed areas. There are multiple approaches to excavate the CCR safely. Unsaturated material will generally be excavated down to the estimated elevation of the regional groundwater table or to the bottom of the CCR layer, whichever is shallower. However, to ensure safety, the excavation and ISS work will need to be coordinated so that excavation work is always conducted from stable ground and that all CCR slopes are kept to an appropriate maximum (typically 7H:1V for this type of material). Excavation work could be accomplished by first working around the perimeter on stable ground, then working inward thus establishing a ring for ISS work. Future work would then be completed from the strengthened CCR after ISS.

Some materials to be excavated do not contain CCR, and these materials will need to be segregated, stockpiled, and sampled separately for potentially reuse on site as backfill material or as road base material during construction. Within the CCR, the groundwater table is somewhat mounded due to the material's lower hydraulic conductivity as compared with surrounding native materials. Therefore, the final elevation for unsaturated removal will be based on boundary condition groundwater elevations (i.e., elevations of groundwater just outside of the CCR limits) or as limited by safety due to stability of the CCR material. Figures 5, 6, and 7 are cross-sections that depict the amount of material present above the water table. Generally, there is 4 to 6 feet of material above the water table that will require removal, and in the northeastern corner of the site this material is up to 10 to 11 feet in thickness. Because of this mounding effect, some of the excavated CCR material will be saturated and may drain free liquids. For unsaturated CCR cuts that are 5 or more feet above the water table, work can proceed in a larger open cut fashion in advance of the deeper excavation and ISS work. Wet CCR may require stockpiling and drainage, and possibly the addition of a small amount of Portland cement to ensure the material passes the paint the filter test prior to shipment off site. As excavations approach the water table, additional water level monitoring and possibly dewatering of the CCR will need to be conducted to ensure safety. Generally, water levels must be kept at least 2 to 3 feet below the active excavation surface to ensure quick conditions do not develop. Monitoring of water levels during excavation will be an important component for safety considerations. These constraints would all be evaluated in detail in the design phase.

The material thicknesses and volumes do not present any unusual challenges for removal, which can be accomplished using any number of standard removal techniques such as excavators, bulldozers, front-end loaders, off-road, and road-worthy hauling trucks. The approximately 92,000 cy of CCR present above the saturated material can be excavated in 4 to 6 months and will generally need to match the schedule of the ISS work. Removals of the unsaturated material must proceed in advance of the ISS work to allow for sufficient work area and increased overhead clearance for the ISS equipment.

Conditions for hauling of material from SWMU15 are also considered favorable. SWMU15 has good access for articulating dump trailers, which can hold up to 30 tons of material. Assuming a density of approximately 1.75 tons/cy, a maximum of 1,750 tons or 58 truckloads would require removal on a daily basis, with most days considerable less than this maximum. Given the favorable access at SWMU15 and good local road system, this number of trucks is considered feasible. In addition, if there were any interruptions in the ability to haul material from the site, including too few trucks provided by the transportation companies or other disruptions at the landfill, excavation could continue by stockpiling material at SWMU15, allowing ISS to continue unimpeded given the large available space at SWMU15.

Waste Disposal Acceptance

In December 2017, Wood personnel met with Waste Management, Inc. personnel at the site to discuss waste disposal analysis parameters that would likely be necessary for the waste acceptance process. Based on that

discussion and follow-up communications, three samples of the CCR were submitted to TestAmerica and analyzed for the following parameters: Toxic Characteristic Leaching Procedure (TCLP) metals plus boron (Method 1311/6010C/7470A), Waste Management's CCR metals list (Methods 6010C/7471B), reactive sulfide (Method 9034), total sulfur (Method 9038), pH (Method 9045D), sulfate (ASTM D516-90, D2), total organic carbon (Lloyd Kahn), percent moisture, and phosphorous (SM 4500). The TestAmerica Laboratory Report for these analyses is included as Attachment C. Reactive cyanide and ignitability (RCRA characteristics) were not tested because these parameters would not likely be present at concentrations of regulatory concern given the waste type, its age, and exposure to the elements.

Based on a preliminary review, the site CCR can likely be accepted in Waste Management's IL or IN landfills and can be commingled with other waste. Segregation of the CCR is not anticipated based on this initial review. The CCR passes the RCRA criteria for TCLP, corrosivity (pH), and reactive sulfide (reactivity). Total metals concentrations are not at levels of concern for disposal as RCRA Subtitle D waste material.

ISS

Once a portion of the unsaturated material is removed and an appropriately-sized area is available for ISS the necessary equipment would be mobilized and the ISS process would begin. The equipment necessary to complete the work will vary depending on the remedial contractor selected and their means and methods. Mixing equipment can be as simple as an excavator bucket or specialized large diameter auger equipment to achieve deeper mixing. For this project and this analysis, the Lang Tool Co. dual axis blender (DAB) was selected as a representative technology for evaluation (see Attachment D, Figure BS-002). The DAB is mounted on a standard excavator and can reach depths as much as 17 feet bgs. Based on the currently available information, the extent of CCR below the water table is approximately 15 feet maximum; therefore, it is feasible for the evaluated technology to reach the required depths. The estimated volume of CCR material below the water table is estimated at 86,000 cy. Work will proceed in the warmer months of the year to avoid freezing weather, given the use of water for slurry makeup and need to pump slurry to the mixing head. Based on the volumes present, the work can be accomplished in approximately six to eight months, from April 1 through December 1.

The other component of the ISS equipment is the slurry plant, which consists of reagent storage (in this case dry Portland cement), water storage, piping, pumps, and mixers. The slurry plant includes software which monitors and controls the water content of the slurry (for example, 75% water to 100% cement by weight). The work is generally accomplished in cells laid out on a North-South-East-West grid system within an overall management unit system. Figure BS-001 in Attachment D depicts three "zones" or management units and the smaller individual cells (10 x 10 feet or 10 x 15 feet) to be used to manage the delivery and mixing of reagents. For SWMU15, three management units would be appropriate. Management units allow for discrete areas of work to be accomplished at a time, minimizing the amount of open area at any one time and reducing concerns for water and other site management challenges.

The volume of slurry for each cell is calculated by determining the volume of material within each cell and multiplying that volume by the material density and the additive ratio (6% in this case). The volume of slurry is then calculated based upon its reagent to water ratio for a total slurry volume for the cell. The reagent slurry is injected at the mixing head in a series of "plunges" through the CCR column. A pre-determined amount of slurry is injected into each plunge to ensure even distribution. The process is closely monitored

and controlled by software integrated with the mixing equipment and at the slurry plant. Using these techniques, the appropriate amount of reagent can be delivered discretely to each cell.

Following injection of the slurry, the CCR is thoroughly mixed within the cell through the vigorous mixing action of the DAB. The control software can maintain a record of where the mixing head has been for quality control and reporting purposes. In addition, a color-coded scheme can be displayed on the system monitors to indicate where the mixing head is relative to target depths. Generally, the mixing head must be advanced into underlying uncontaminated or native materials to ensure complete treatment of the target material. This additional depth is typically six inches.

The system control and monitoring system ensures the right amount of amendments are delivered in a consistent fashion with the ability to output reports document the location of the mixing head and amount of reagents. This control method also ensures proper curing of the mixed materials. Samples of mixed material can be collected from required depths using specialized sampling equipment and submitted for lab analysis of unconfined compressive strength, a key measure of the completeness of mix and curing process. Following mixing and during curing the mixed material may expand or contract, due to the addition of materials (water and Portland cement), and the curing of the mix which may cause net expansion or contraction. Based on treatability study results volumetric expansion may occur; however, based on experience volumetric expansion typically does not match laboratory results and can be variable at the full scale. For this reason, the treated material will need to be graded post-treatment to ensure proper drainage and allow the site to backfilled and graded to the final restoration plan.

Water Management

Management of run-on and run-off during remedial activities will be another important consideration during design. Generally, run-on will need to be diverted around the work area through a series of berms, ditches, check dams, and other appropriate best management practices to ensure that excess water does not enter the work area. Silt fence and other erosion control features will need to be installed around the site to protect natural resources from any sediment carried by runoff. The use of management units will allow for more complete control of water flows on the site. Because the site is generally flat and will first be excavated prior to ISS, all slopes will generally be pitched inward to the excavation, minimizing the potential for release of contaminated runoff.

During excavation down to the water table within the CCR, some water may drain from wet CCR material. Generally, this water will be allowed to re-infiltrate during excavation. Therefore, a carefully implemented water management plan will need to be developed, identifying the sequencing of work (e.g., working from low areas to high areas) that best controls the flow and accumulation of water within the excavation.

Water that accumulates from precipitation events, drains from CCR, or is liberated during the mixing process and that does not re-infiltrate can be reincorporated as makeup water into the amendment slurry, minimizing or eliminating any excess water requiring additional handling. Excess water not useable on site can alternatively be recharge to groundwater on the site at a location downgradient of the work area. The amount of open area at any given time will need to be kept to a minimum to avoid accumulation of water. Following ISS, the site will be backfilled and graded to promote positive drainage that is consistent with the desired final restoration of the site.

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List of Figures

- | | |
|-----------|--|
| Figure 1 | Sitewide Overview |
| Figure 2 | Cross Section Location Plan with Ground Surface Contours |
| Figure 3 | Groundwater Elevation Contour Plan |
| Figure 4 | Bottom of CCR Contour Plan |
| Figure 5 | Cross-Section A-A' |
| Figure 6 | Cross-Section B-B' |
| Figure 7 | Cross-Section C-C' |
| Figure 8 | Thickness of CCR |
| Figure 9 | Thickness of Soil and CCR Above the Water Table |
| Figure 10 | Thickness of CCR Below Water Table |

List of Attachments

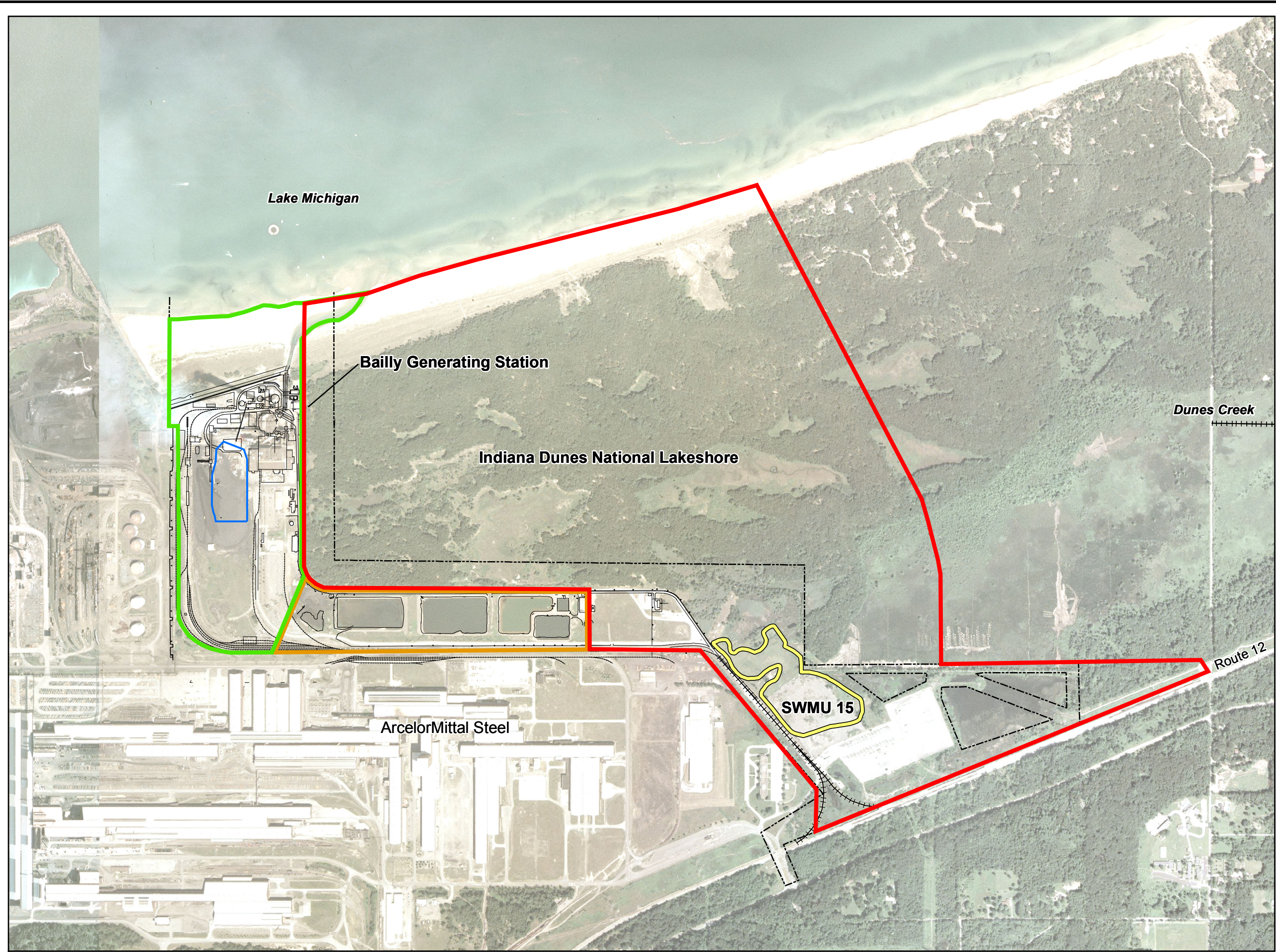
- Attachment A – Kaysen email dated 9/22/17
- Attachment B – Existing Conditions/Topographic Survey by DLZ Industrial
- Attachment C – Landfill Waste Characterization Lab Report
- Attachment D - Lang Tool Excavation Cell and DAB Figures



wood.

Figures





Sitewide Overview

Northern Indiana Public Service Company

Baily Generating Station
Chesterton, Indiana

Legend

- Baily Generating Station Property Boundary
- Approximate Slurry Wall Location
- +++++ Railroad
- Area A
- Area B
- Area C
- SWMU 15

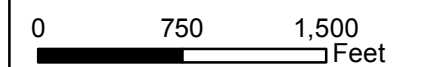
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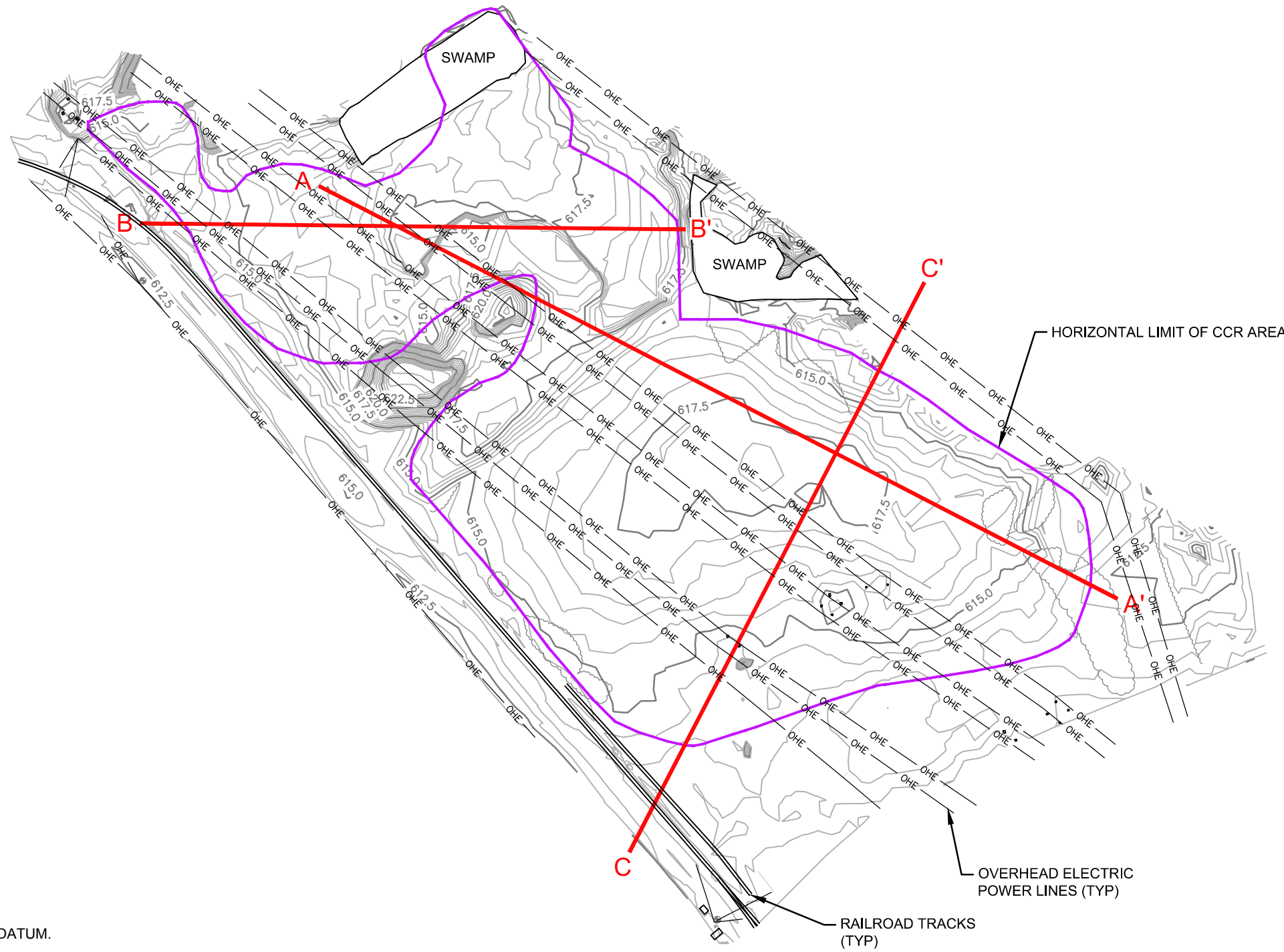
Notes and Sources

FIGURE 1

Aerial Photo: March 2003
Courtesy of Indiana Spatial Data Portal

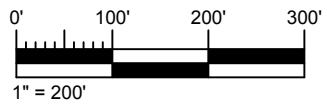


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LEGEND
 — 617.5 — MAJOR CONTOUR
 — — MINOR CONTOUR

NOTE:
 VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
 BAILLY GENERATING STATION
 CHESTERTON, INDIANA**

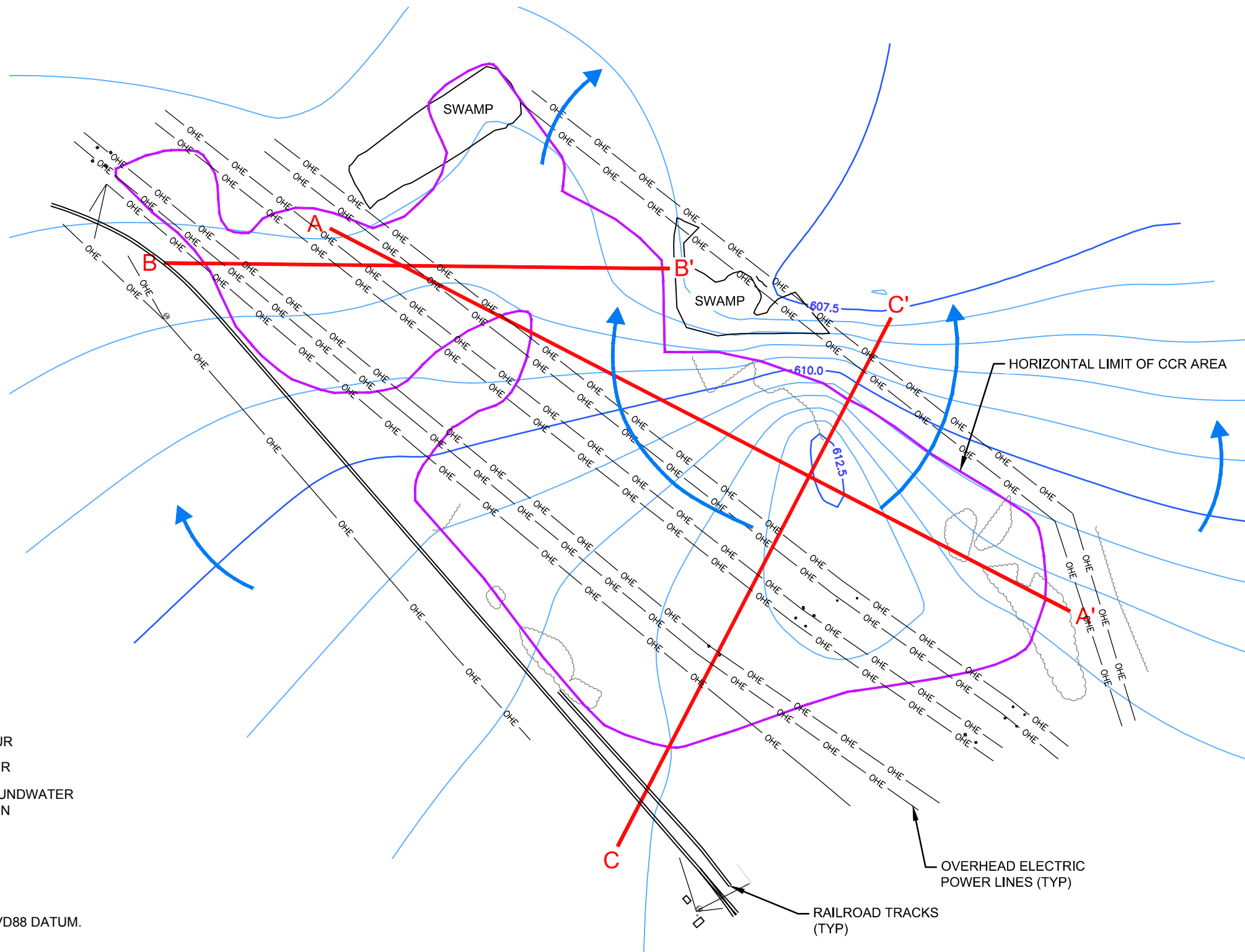
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 SCALE: AS SHOWN



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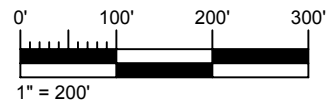
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**CROSS SECTION LOCATION PLAN
 WITH GROUND SURFACE CONTOURS**

DATE: NOV 2018
 PROJECT NO: 377882016
 REV. NO.:
 FIGURE No. 2



- LEGEND**
- 612.5 MAJOR CONTOUR
 - MINOR CONTOUR
 - INFERRED GROUNDWATER FLOW DIRECTION

NOTE:
VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA**

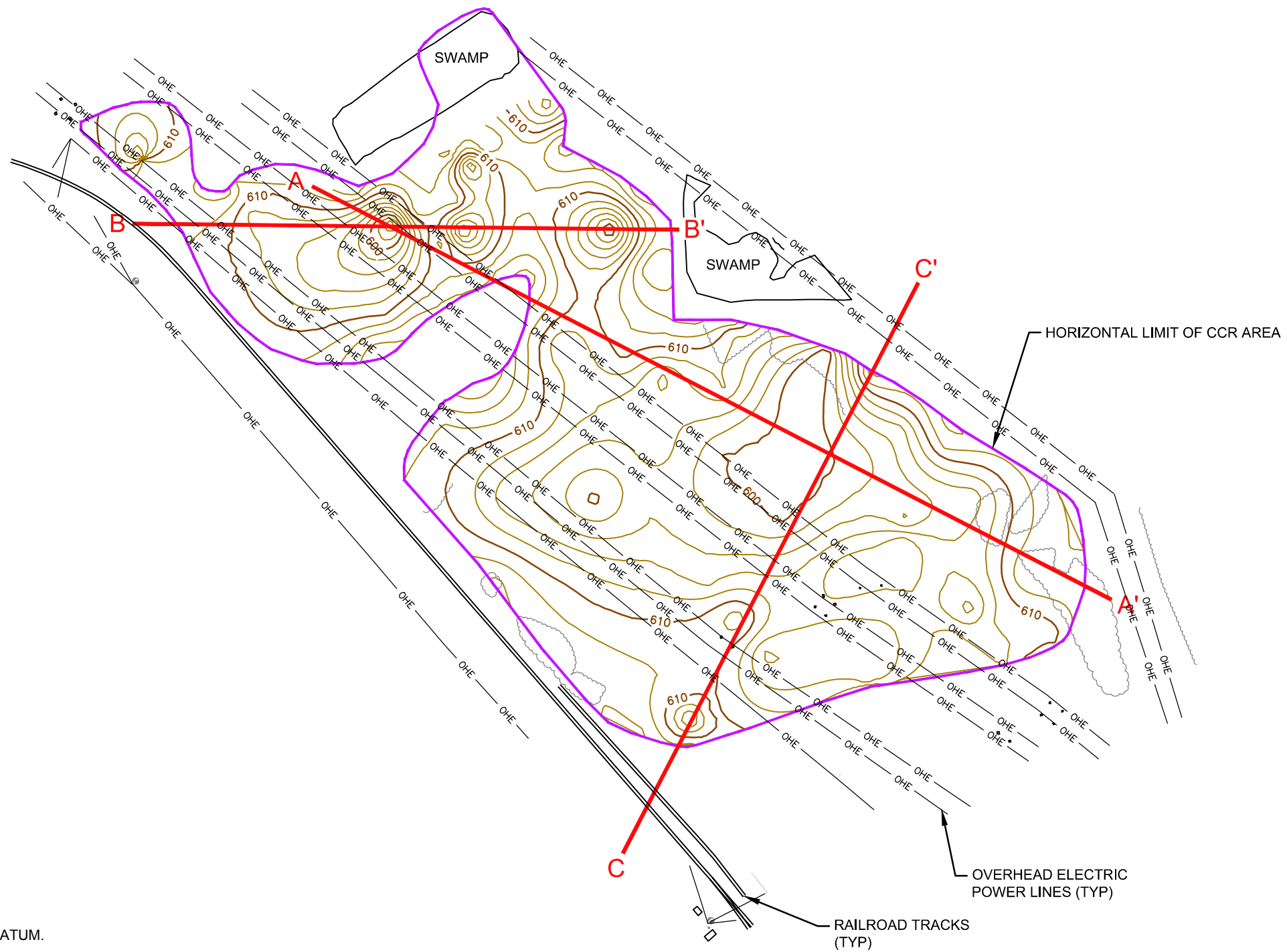
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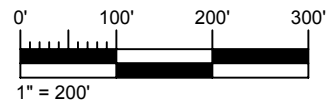
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**CROSS SECTION LOCATION PLAN
WITH GROUNDWATER CONTOURS**

DATE: NOV 2018
PROJECT NO: 377882016
REV. NO.:
FIGURE No. 3



LEGEND
 — 610 — MAJOR CONTOUR
 — — MINOR CONTOUR

NOTE:
 VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
 BAILLY GENERATING STATION
 CHESTERTON, INDIANA**

DRAWN BY: BEG
 CHECKED BY: RAD
 DATUM: NAD83
 COORDINATE SYSTEM: SP - INDIANA WEST
 SCALE: AS SHOWN

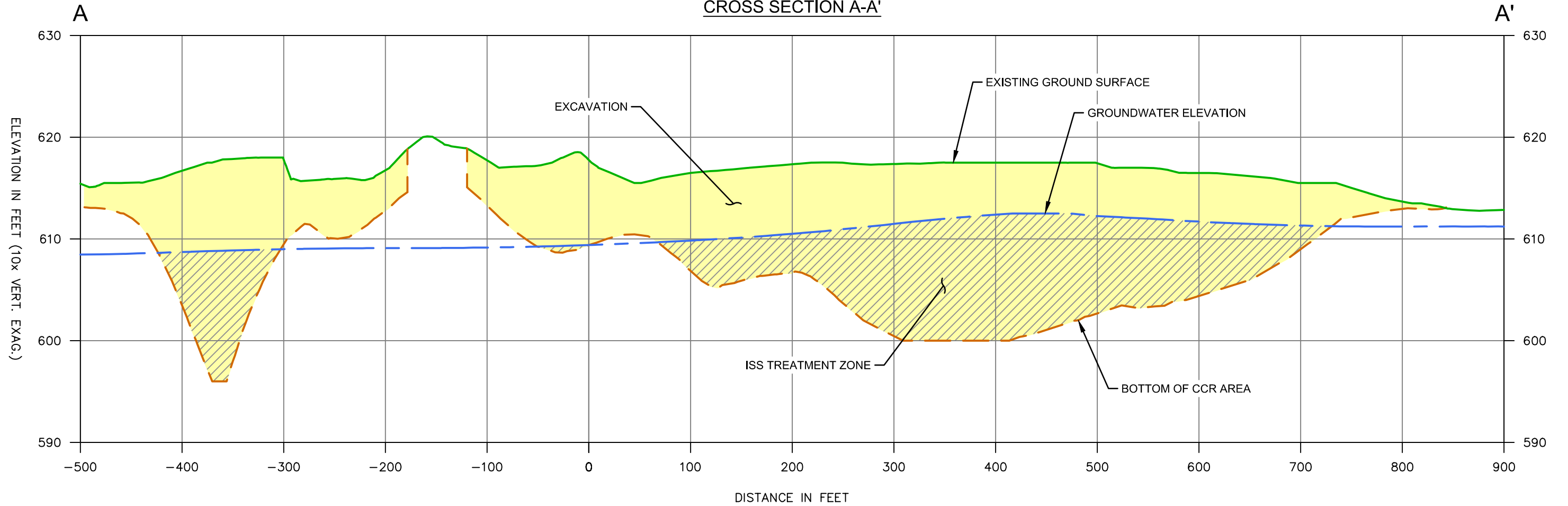


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TITLE
**CROSS SECTION LOCATION PLAN
 WITH BOTTOM OF CCR CONTOURS**

DATE: NOV 2018
 PROJECT NO: 377882016
 REV. NO.:
 FIGURE No. 4

CROSS SECTION A-A'



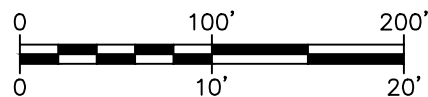
LEGEND

- CCR
- ISS TREATMENT ZONE

NOTES:

1. VERTICAL CONTROL USES THE NAVD88 DATUM.
2. SURFICIAL LAYERS NOTED AS CCR CONTAIN OTHER UNCONTAMINATED MATERIALS SUCH AS TOP SOIL, BLAST FURNACE SLAG, AND OTHER SOILS THAT DO NOT REQUIRE OFF-SITE DISPOSAL. THIS MATERIAL WILL BE SEGREGATED, SAMPLED, AND POTENTIALLY REUSED.

HORIZONTAL SCALE: 1" = 100'



VERTICAL SCALE: 1" = 10'

CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA

DRAWN BY: BEG
CHECKED BY: RAD
DATUM: NONE
COORDINATE SYSTEM: NONE
SCALE: AS SHOWN



271 MILL ROAD
CHELMSFORD, MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
WEB: WWW.WOODPLC.COM

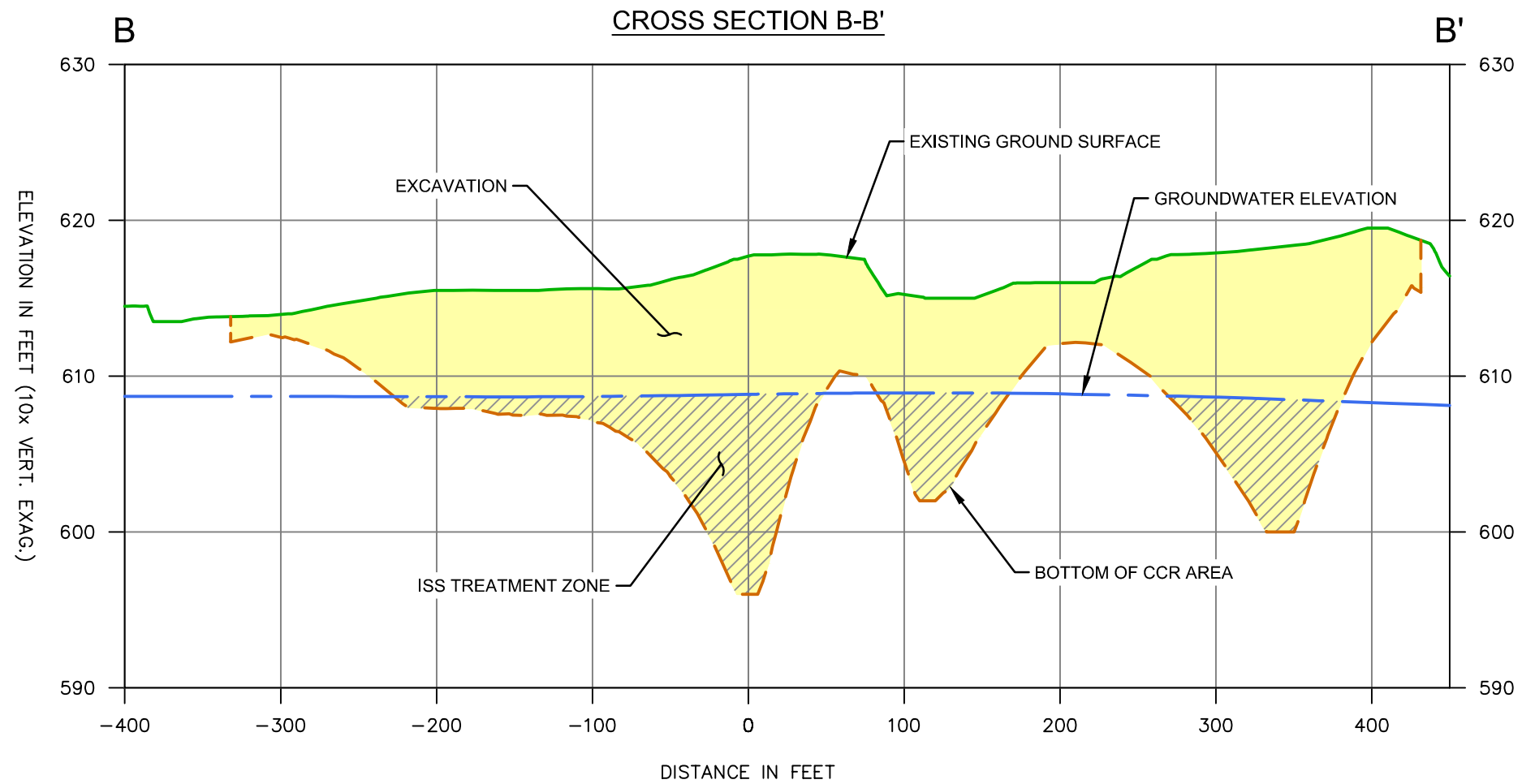
CROSS SECTION A-A'

DATE: NOV 2018

PROJECT NO: 377882016

REV. NO.:

FIGURE No. 5

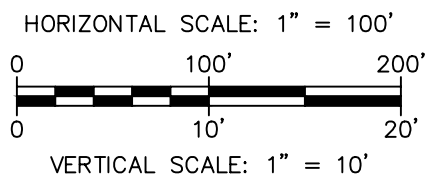


LEGEND

- CCR
- ISS TREATMENT ZONE

NOTES:

1. VERTICAL CONTROL USES THE NAVD88 DATUM.
2. SURFICIAL LAYERS NOTED AS CCR CONTAIN OTHER UNCONTAMINATED MATERIALS SUCH AS TOP SOIL, BLAST FURNACE SLAG, AND OTHER SOILS THAT DO NOT REQUIRE OFF-SITE DISPOSAL. THIS MATERIAL WILL BE SEGREGATED, SAMPLED, AND POTENTIALLY REUSED.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT:
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA**

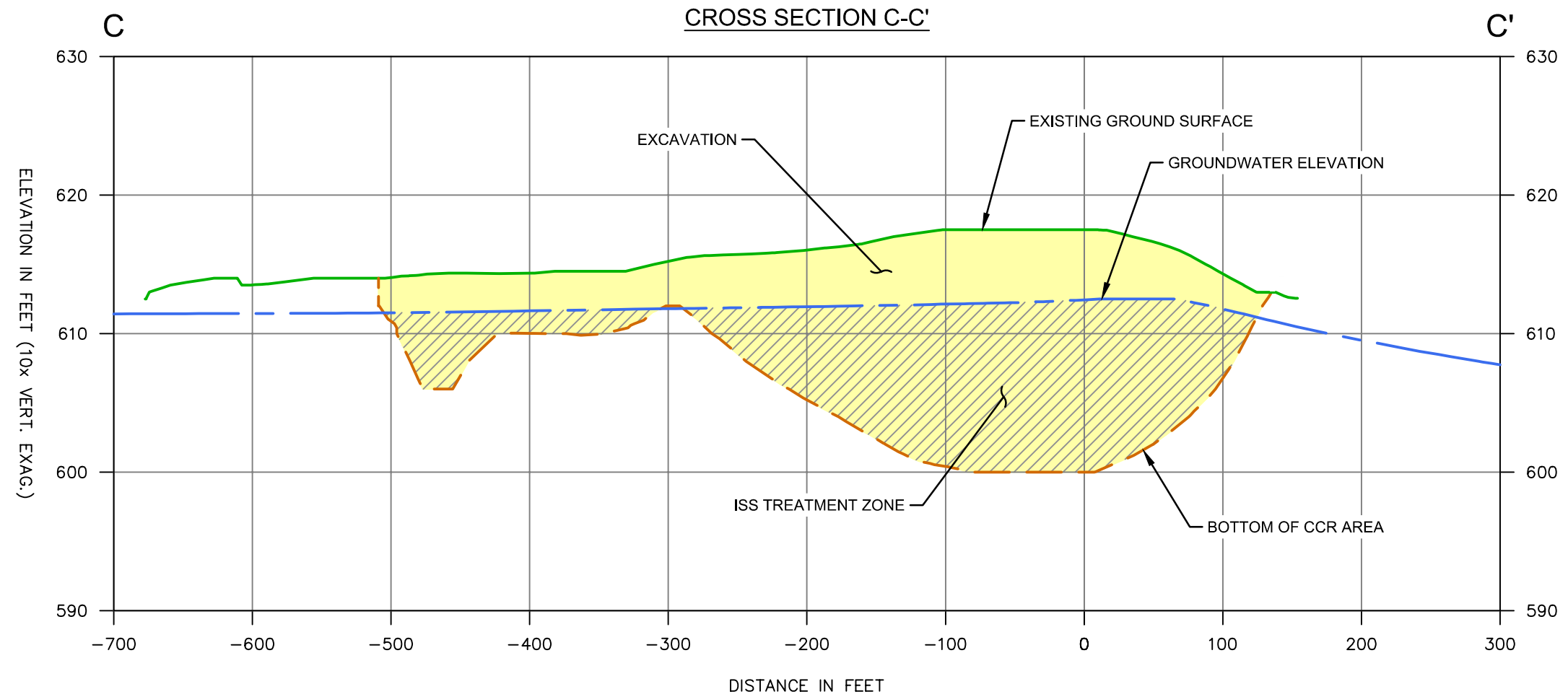
DRAWN BY: BEG
CHECKED BY: RAD
DATUM: NONE
COORDINATE SYSTEM: NONE
SCALE: AS SHOWN



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WEB: WWW.WOODPLC.COM

CROSS SECTION B-B'

DATE: NOV 2018
PROJECT NO: 377882016
REV. NO.:
FIGURE No. 6

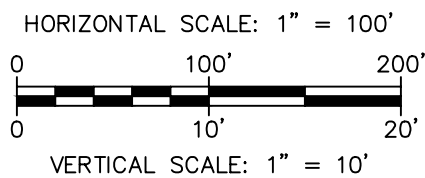


LEGEND

- CCR
- ISS TREATMENT ZONE

NOTES:

1. VERTICAL CONTROL USES THE NAVD88 DATUM.
2. SURFICIAL LAYERS NOTED AS CCR CONTAIN OTHER UNCONTAMINATED MATERIALS SUCH AS TOP SOIL, BLAST FURNACE SLAG, AND OTHER SOILS THAT DO NOT REQUIRE OFF-SITE DISPOSAL. THIS MATERIAL WILL BE SEGREGATED, SAMPLED, AND POTENTIALLY REUSED.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA

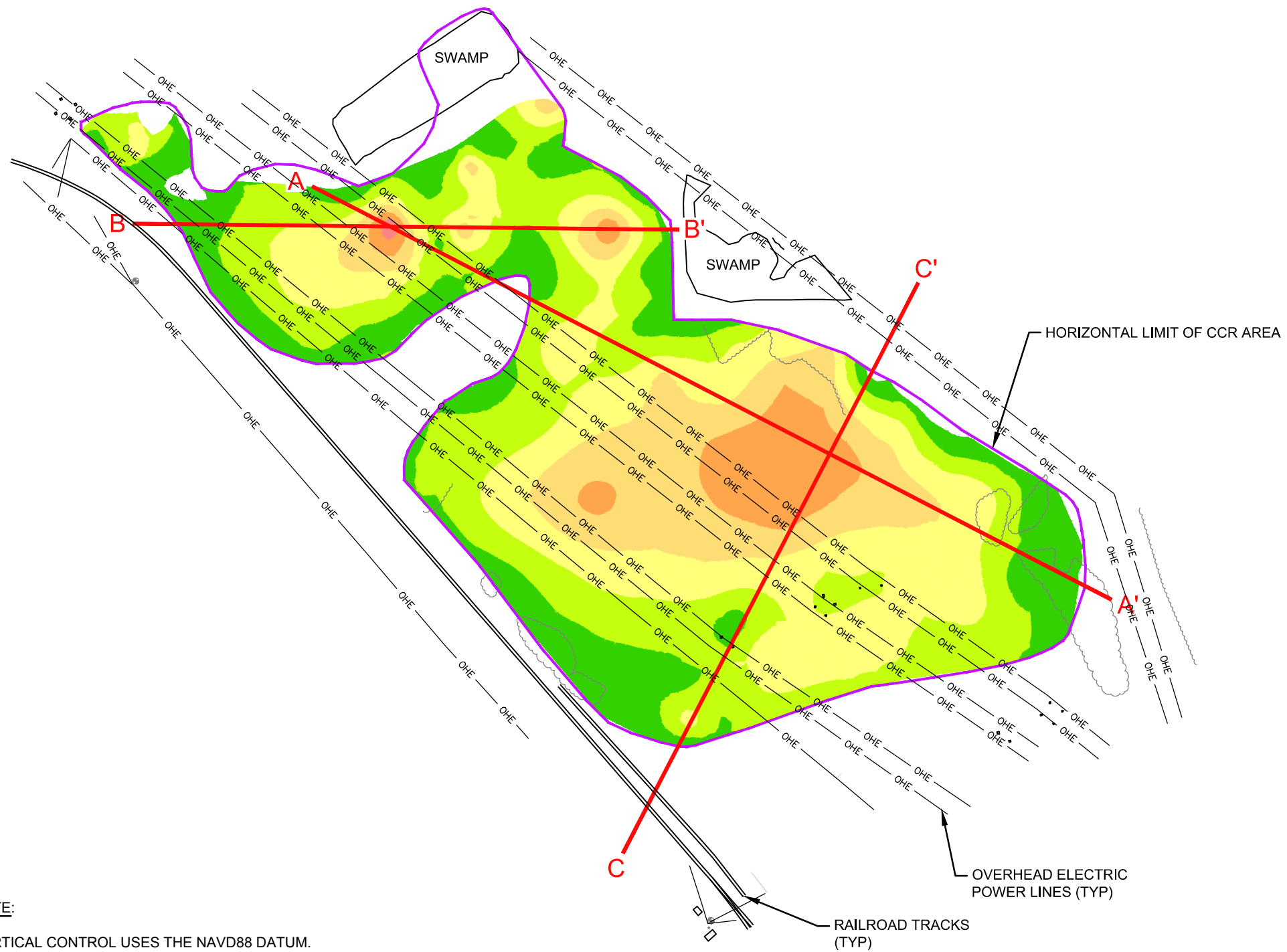
DRAWN BY: BEG
CHECKED BY: RAD
DATUM: NONE
COORDINATE SYSTEM: NONE
SCALE: AS SHOWN



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CHELMSFORD, MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
WEB: WWW.WOODPLC.COM

CROSS SECTION C-C'

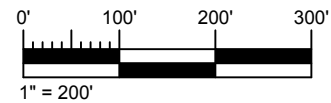
DATE: NOV 2018
PROJECT NO: 377882016
REV. NO.:
FIGURE No. 7



THICKNESS LEGEND

	-4' -- 0'
	-8' -- -4'
	-12' -- -8'
	-16' -- -12'
	-20' -- -16'
	< -20'

NOTE:
VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA**

DRAWN BY: BEG
CHECKED BY: RAD
DATUM: NAD83
COORDINATE SYSTEM: SP - INDIANA WEST
SCALE: AS SHOWN



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TELEPHONE: (978) 692-9090
WEB: WWW.WOODPLC.COM

TITLE
**EXISTING GRADE TO BOTTOM OF CCR
THICKNESS**

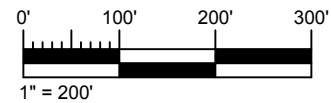
DATE: NOV 2018
PROJECT NO: 377882016
REV. NO.:
FIGURE No. 8



THICKNESS LEGEND

	-4' -- 0'
	-8' -- -4'
	-12' -- -8'
	-16' -- -12'
	-20' -- -16'
	< -20'

NOTE:
VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA**

DRAWN BY:
BEG

CHECKED BY:
RAD

DATUM:
NAD83

COORDINATE SYSTEM:
SP - INDIANA WEST

SCALE:
AS SHOWN



271 MILL ROAD
CHELMSFORD, MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
WEB: WWW.WOODPLC.COM

TITLE
**EXCAVATION THICKNESS
ABOVE ISS TREATMENT AREAS**

DATE:
NOV 2018

PROJECT NO:
377882016

REV. NO.:

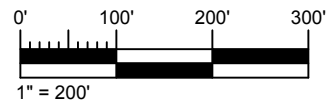
FIGURE No.
9



THICKNESS LEGEND

	-4' -- 0'
	-8' -- -4'
	-12' -- -8'
	-16' -- -12'
	-20' -- -16'
	< -20'

NOTE:
VERTICAL CONTROL USES THE NAVD88 DATUM.



CLIENT:
NORTHERN INDIANA PUBLIC SERVICE COMPANY

PROJECT
**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION
CHESTERTON, INDIANA**

DRAWN BY: BEG
CHECKED BY: RAD
DATUM: NAD83
COORDINATE SYSTEM: SP - INDIANA WEST
SCALE: AS SHOWN



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TELEPHONE: (978) 692-9090
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TITLE
**ISS TREATMENT AREAS
THICKNESS**

DATE: NOV 2018
PROJECT NO: 377882016
REV. NO.:
FIGURE No. 10



wood.

Attachment A

USEPA e-mail September 22, 1017

Johnson, Russell A

From: Kaysen, Michelle <kaysen.michelle@epa.gov>
Sent: Friday, September 22, 2017 5:00 PM
To: Johnson, Russell A
Cc: DSullivan@NiSource.com; Charles Morris; Gia Wagner; Dodds, Jennifer
Subject: Re: BGS - Availability of Response to EPA Comments dated 8/18/17

Thanks, Russ. I happen to be reviewing a CMS for another site proposing in-situ SS and see an opportunity to gain some efficiencies here. I would request NIPSCO include an appendix in the revised CMS with information that might otherwise be in a CMI work plan. I believe the additional information is going to assist the Agency in making its recommendation for the Statement of Basis. This would save us the step of another deliverable after the CMS and before the SB.

Some of the information that should be included:

Implementability:

Though this is usually touched on in the CMS, include more specific information on how NIPSCO might conduct the work.

Dividing the area into management cells?

Water management?

Method to ensure proper curing?

Ensuring consistent preparation of reagent in the field?

Ensuring sufficient mixing with the native material?

Remedial endpoints versus efficacy of SS-treated area per performance criteria:

Decision logic should be established upfront that connects the required endpoints with performance criteria. Performance criteria might include unconfined compressive strength, hydraulic conductivity, and leachability (tolerance intervals may be considered).

It's recommended that NIPSCO demonstrate UCS from the perspective of long-term durability, but future redevelopment might also be a consideration. Durability associated with water table interactions should also be included, such as: ASTM D4843 Wetting and Drying Test; ASTM C1262 Freeze-Thaw; and, leachability (LEAF, as discussed).

Since the leachate tests can be an imperfect representation of actual field conditions, multiple lines of evidence is requested. For example, it's recommended relative hydraulic conductivity of the SS material and the surrounding native soils be compared and used as a line of evidence (in addition to leaching). Combined within a fate and transport model, the lines of evidence should demonstrate percent reduction in mass flux and acceptable attenuation to the POC in support of remedial endpoints.

It's unclear how realistic it is to assume sufficient attenuation between the treated material and the POC given the location of the CCR relative to the property boundary, so these lines of evidence will be important.

Long-term Stewardship:

The nature of a SS remedy leaving waste in place, neither destroying nor degrading COCs, presents unique challenges immediately adjacent to a national park. The long-term stewardship of this remedy will require thought. Some of the issues to consider are:

-groundwater monitoring, frequency and duration

- potential changes in flow regime induced by the monolith, implications on monitoring locations and effects to downgradient wetlands
- time of travel and anticipated attenuation to POC
- institutional controls
- financial assurance
- 5 year remedy reviews

I recognize the realities of on-boarding subcontractors might make it difficult to address certain details in the revised CMS quickly; however, I see this level of detail being required for the Agency to make a final remedy proposal. Hopefully providing this to you now will save us a little time on the CMS, so we can discuss timing and scheduling of that submittal. Please let me know if you have any questions.

Thanks
Michelle

From: Johnson, Russell A <russell.johnson2@amecfw.com>
Sent: Friday, September 22, 2017 9:52 AM
To: Kaysen, Michelle
Cc: DSullivan@NiSource.com
Subject: RE: BGS - Availability of Response to EPA Comments dated 8/18/17

Hi Michelle – a field pilot study as part of the Corrective Measures Study is not contemplated at this time. Let's see what we get for results from the LEAF bench-scale pilot study. I'll be working on the schedule/submittals with Dan next week.

Thank you.

Russell A. Johnson, LEP

Program Manager, Environment & Infrastructure, Amec Foster Wheeler
271 Mill Road, 3rd Floor, Chelmsford, MA USA
T +1 978-692-9090 D +1 978-392-5336 M +1 508-954-2518
russell.johnson@amecfw.com amecfw.com



From: Kaysen, Michelle [<mailto:kaysen.michelle@epa.gov>]
Sent: Tuesday, September 19, 2017 11:36 AM
To: Johnson, Russell A <russell.johnson2@amecfw.com>
Cc: DSullivan@NiSource.com
Subject: RE: BGS - Availability of Response to EPA Comments dated 8/18/17

Russ,
Thanks for the response to comments. EPA concurs with the path forward on the bench scale studies followed by the revised CMS. Is it contemplated that a field pilot study might be necessary?

Please provide a schedule of the various activities and submittals.

Thanks,
Michelle

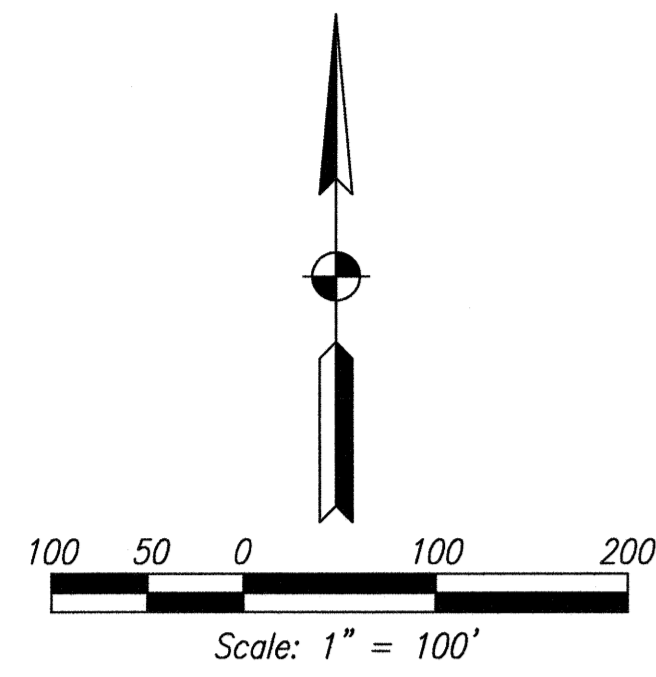


wood.

Attachment B

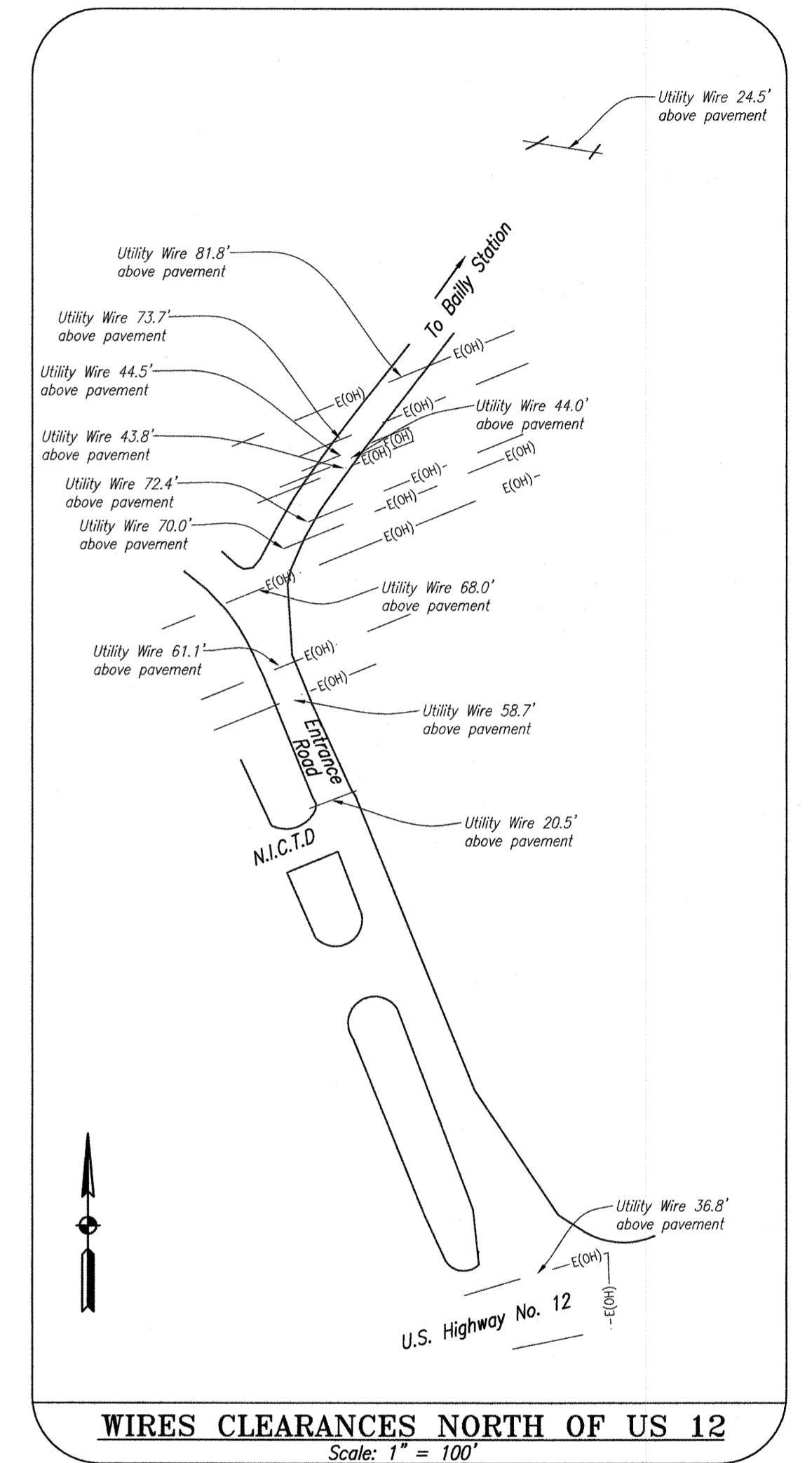
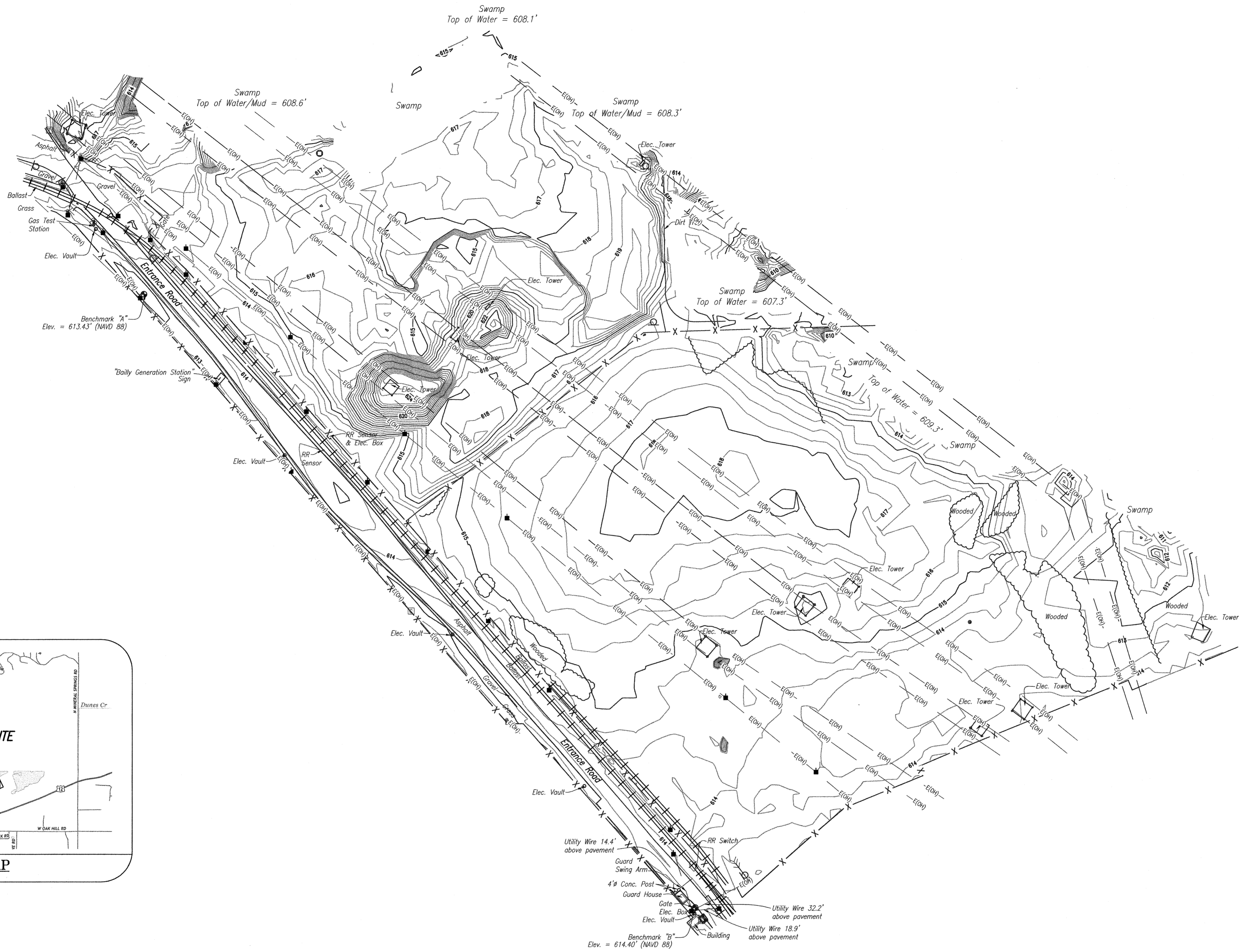
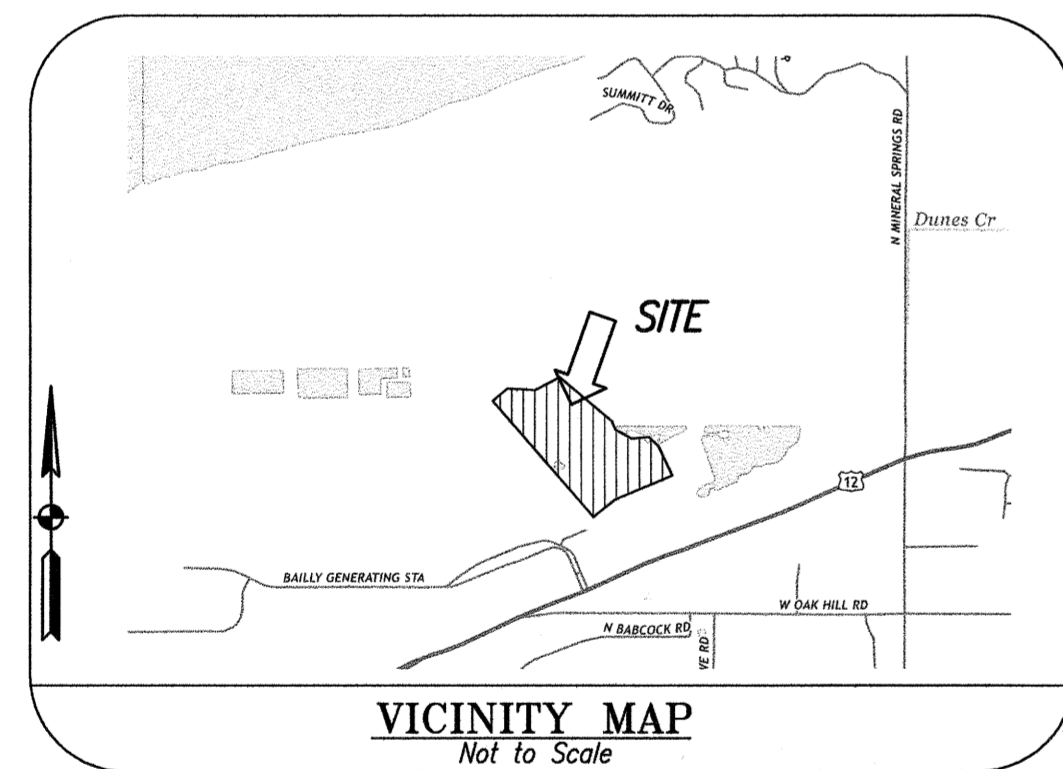
Existing Conditions Survey

TOPOGRAPHIC SURVEY



Legend

- Power Pole
- Electric Riser
- Cable Pedestal
- Telephone Pedestal
- Fiber Optic Marker
- Gas Marker
- Gas Vent Pipe
- Monitoring Well
- Sign
- Mailbox
- Post
- ▲ Guy Anchor
- ==== Railroad Tracks
- Fence
- (OH)--- Overhead Utility Wires
- ~ Tree Line



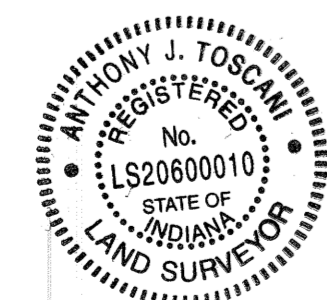
General Notes:

- This drawing is not intended to be represented as a retracement or original boundary survey, a route survey, or a Surveyor Location Report.
- The contours shown hereon are based on a ground survey and are referenced to the North American Vertical Datum of 1988 (NAVD88) based on GPS measurements from the Indiana Department of Transportation Continuously Operating Reference Network (INDOT CORS). Ellipsoid heights were converted to elevations using Geoid 12A.

Site Benchmarks:

- Benchmark 'A' - Benchtie in the road side face of N.I.P.S.Co Utility Pole No. 956/838 located on the west side of the entrance road +/- 1300 feet northwest of the Guard House. Elevation: 613.43'
- Benchmark 'B' - Benchtie in the road side face of N.I.P.S.Co Utility Pole No. 956/845 located on the west side of the entrance road on the southeast side of the Guard House. Elevation: 614.40'

Anthony J. Toscani
Anthony J. Toscani
Indiana Professional Surveyor No. LS20600010
Date of Plat: September 19, 2016
Last Date of Fieldwork: September 16, 2016

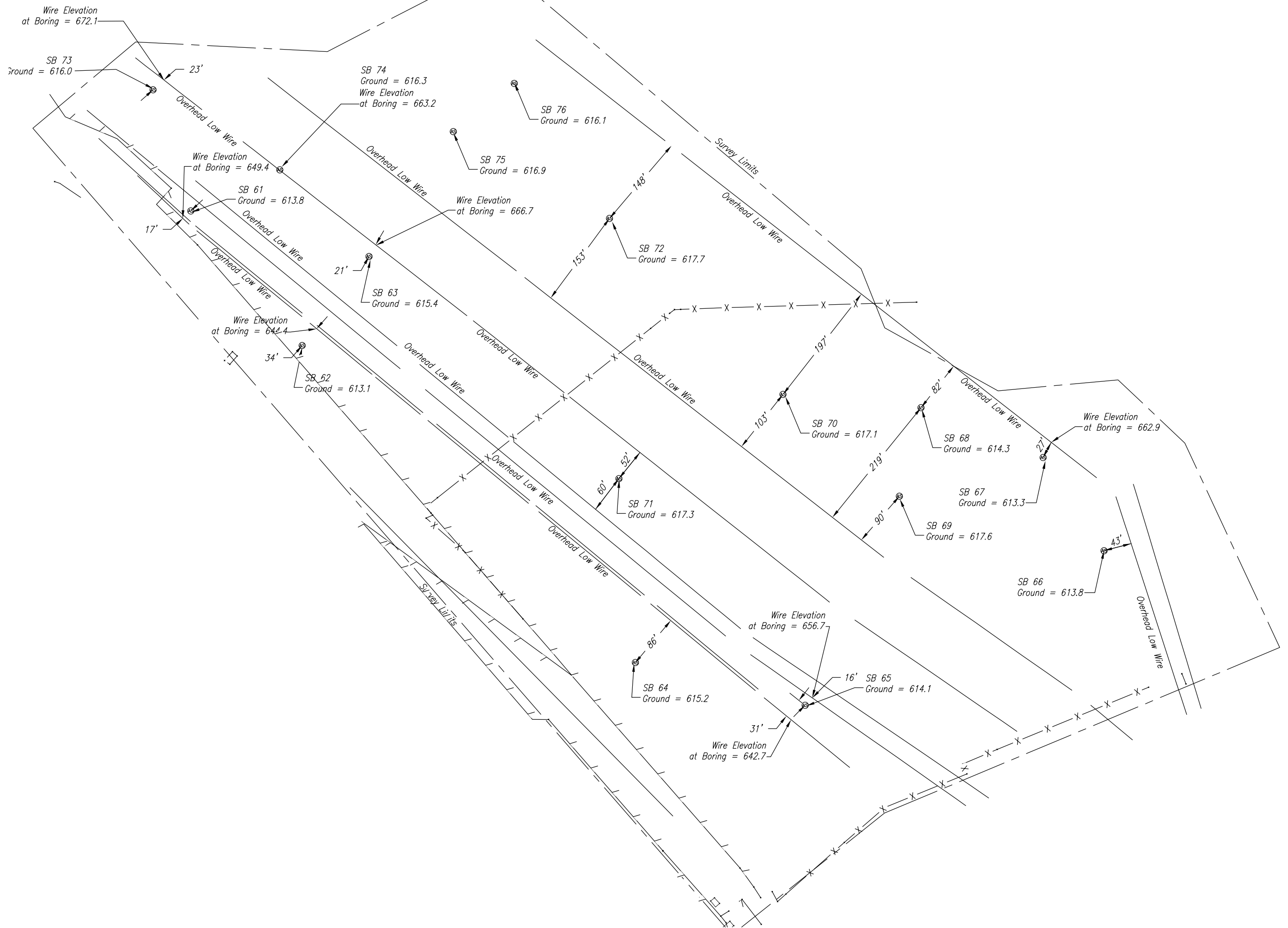


DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

PORTAGE INDIANA
**TOPOGRAPHIC SURVEY
WITHIN THE SWMU 15 AREA**
AT BAILY STATION
FOR: AMEC ENVIRONMENTAL & INFRASTRUCTURE, INC.

DRAWN:	CHK'D:	NO.	REVISION	BY	DATE
KLK	RHK				
DESIGNED:	APPRV'D:				
APPRV'D:	AJT				
DATE:	9/20/16				
SCALE:	1" = 100'				
PROJECT NUMBER					
1650-8093-90					

SHEET 1
OF 1
DRAWING NUMBER
8093TO





wood.

Attachment C

Landfill Waste Characterization Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-128745-1

Client Project/Site: Bailly Generating Station

For:

AMEC Foster Wheeler E & I, Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

1/9/2018 10:47:56 AM

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

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Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Method Summary	4
Definitions	5
Case Narrative	6
Detection Summary	7
Client Sample Results	10
QC Sample Results	16
QC Association	24
Certification Summary	28
Chain of Custody	31
Receipt Checklists	37

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-128745-1	COMP SB777879	Solid	12/06/17 11:45	12/09/17 09:00
480-128745-2	COMP SB808182	Solid	12/06/17 12:55	12/09/17 09:00
480-128745-3	COMP SB838485	Solid	12/06/17 10:10	12/09/17 09:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method	Method Description	Protocol	Laboratory
6010C	TCLP Metals (ICP)	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL CAN
7470A	TCLP Mercury	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL CAN
9034	Sulfide, Reactive	SW846	TAL BUF
9038	Sulfur, Total	SW846	TAL SAV
9045D	pH	SW846	TAL BUF
D516-90, 02	Sulfate	ASTM	TAL BUF
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUF
SM 4500 P E	Phosphorus	SM	TAL BUF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Job ID: 480-128745-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-128745-1**

Comments

No additional comments.

Receipt

The samples were received on 12/9/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Metals

Method(s) 6010C: The recovery of Post Spike, (480-128745-A-3-D PDS), in batch 480-392921 and 480-393125 exhibited results outside the quality control limits for TCLP Boron. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method(s) Lloyd Kahn: The following samples were analyzed outside of analytical holding time due to system outages. COMP SB777879 (480-128745-1), COMP SB808182 (480-128745-2) and COMP SB838485 (480-128745-3)

Method(s) 9045D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: COMP SB777879 (480-128745-1), COMP SB808182 (480-128745-2) and COMP SB838485 (480-128745-3).

Method(s) 9038: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 680-508540 and analytical batch 680-508563 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9038: The sample duplicate (DUP) precision for preparation batch 680-508540 and analytical batch 680-508563 was outside control limits. Sample matrix interference is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB777879

Lab Sample ID: 480-128745-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	14000		23	6.8	mg/Kg	1	☒	6010C	Total/NA
Arsenic	110		1.8	0.48	mg/Kg	1	☒	6010C	Total/NA
Barium	190	F1	23	0.48	mg/Kg	1	☒	6010C	Total/NA
Boron	140		23	0.56	mg/Kg	1	☒	6010C	Total/NA
Cadmium	3.8		0.58	0.025	mg/Kg	1	☒	6010C	Total/NA
Calcium	31000		580	27	mg/Kg	1	☒	6010C	Total/NA
Chromium	58		1.2	0.088	mg/Kg	1	☒	6010C	Total/NA
Copper	39		2.9	0.27	mg/Kg	1	☒	6010C	Total/NA
Iron	38000		23	3.7	mg/Kg	1	☒	6010C	Total/NA
Lead	49		1.2	0.23	mg/Kg	1	☒	6010C	Total/NA
Magnesium	13000	F1	580	6.1	mg/Kg	1	☒	6010C	Total/NA
Manganese	1100		1.8	0.098	mg/Kg	1	☒	6010C	Total/NA
Molybdenum	40	F1	4.7	0.069	mg/Kg	1	☒	6010C	Total/NA
Potassium	2100		580	7.2	mg/Kg	1	☒	6010C	Total/NA
Selenium	7.5		2.3	0.40	mg/Kg	1	☒	6010C	Total/NA
SiO2, Silica	940	F1 F2	130	4.8	mg/Kg	1	☒	6010C	Total/NA
Sodium	470	J	580	22	mg/Kg	1	☒	6010C	Total/NA
Strontium	87	F1	5.8	1.1	mg/Kg	1	☒	6010C	Total/NA
Titanium	570		5.8	0.14	mg/Kg	1	☒	6010C	Total/NA
Zinc	300		5.8	0.65	mg/Kg	1	☒	6010C	Total/NA
Arsenic	0.052		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	1.6		1.0	0.10	mg/L	1		6010C	TCLP
Boron	1.5		0.50	0.10	mg/L	1		6010C	TCLP
Cadmium	0.031		0.0020	0.00050	mg/L	1		6010C	TCLP
Lead	0.0091	J	0.020	0.0030	mg/L	1		6010C	TCLP
Selenium	0.0097	J	0.025	0.0087	mg/L	1		6010C	TCLP
Total Organic Carbon	14000	H	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA
Phosphorus	360	B	9.0	3.6	mg/Kg	20	☒	SM 4500 P E	Total/NA
Sulfate	49	J	63	31	mg/Kg	1	☒	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Sulfur	350	F1	230	230	mg/Kg	1	☒	9038	Total/NA
pH	8.5	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	19.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

Client Sample ID: COMP SB808182

Lab Sample ID: 480-128745-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	11000		20	5.7	mg/Kg	1	☒	6010C	Total/NA
Arsenic	220		1.5	0.40	mg/Kg	1	☒	6010C	Total/NA
Barium	99		20	0.40	mg/Kg	1	☒	6010C	Total/NA
Boron	210		20	0.47	mg/Kg	1	☒	6010C	Total/NA
Cadmium	4.1		0.49	0.021	mg/Kg	1	☒	6010C	Total/NA
Calcium	4500		490	23	mg/Kg	1	☒	6010C	Total/NA
Chromium	83		0.98	0.074	mg/Kg	1	☒	6010C	Total/NA
Copper	53		2.5	0.23	mg/Kg	1	☒	6010C	Total/NA
Iron	38000		20	3.2	mg/Kg	1	☒	6010C	Total/NA
Lead	130		0.98	0.20	mg/Kg	1	☒	6010C	Total/NA
Magnesium	1500		490	5.1	mg/Kg	1	☒	6010C	Total/NA
Manganese	70		1.5	0.083	mg/Kg	1	☒	6010C	Total/NA
Molybdenum	31		3.9	0.058	mg/Kg	1	☒	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB808182 (Continued)

Lab Sample ID: 480-128745-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	2000		490	6.1	mg/Kg	1	☼	6010C	Total/NA
Selenium	5.6		2.0	0.33	mg/Kg	1	☼	6010C	Total/NA
SiO2, Silica	2200		110	4.0	mg/Kg	1	☼	6010C	Total/NA
Sodium	380	J	490	19	mg/Kg	1	☼	6010C	Total/NA
Strontium	66		4.9	0.92	mg/Kg	1	☼	6010C	Total/NA
Titanium	680		4.9	0.12	mg/Kg	1	☼	6010C	Total/NA
Zinc	430		4.9	0.55	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.16		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	0.87	J	1.0	0.10	mg/L	1		6010C	TCLP
Boron	1.9		0.50	0.10	mg/L	1		6010C	TCLP
Cadmium	0.016		0.0020	0.00050	mg/L	1		6010C	TCLP
Chromium	0.011	J	0.020	0.010	mg/L	1		6010C	TCLP
Lead	0.015	J	0.020	0.0030	mg/L	1		6010C	TCLP
Total Organic Carbon	18000	H	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA
Phosphorus	580	B	8.4	3.4	mg/Kg	20	☼	SM 4500 P E	Total/NA
Sulfate	57	J	64	32	mg/Kg	1	☼	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Sulfur	380		210	210	mg/Kg	1	☼	9038	Total/NA
pH	8.3	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	19.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

Client Sample ID: COMP SB838485

Lab Sample ID: 480-128745-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	7000		23	6.6	mg/Kg	1	☼	6010C	Total/NA
Arsenic	92		1.7	0.47	mg/Kg	1	☼	6010C	Total/NA
Barium	76		23	0.47	mg/Kg	1	☼	6010C	Total/NA
Boron	110		23	0.55	mg/Kg	1	☼	6010C	Total/NA
Cadmium	3.9		0.57	0.024	mg/Kg	1	☼	6010C	Total/NA
Calcium	8600		570	26	mg/Kg	1	☼	6010C	Total/NA
Chromium	54		1.1	0.086	mg/Kg	1	☼	6010C	Total/NA
Copper	41		2.9	0.26	mg/Kg	1	☼	6010C	Total/NA
Iron	30000		23	3.7	mg/Kg	1	☼	6010C	Total/NA
Lead	44		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Magnesium	1700		570	6.0	mg/Kg	1	☼	6010C	Total/NA
Manganese	110		1.7	0.096	mg/Kg	1	☼	6010C	Total/NA
Molybdenum	73		4.6	0.068	mg/Kg	1	☼	6010C	Total/NA
Potassium	1200		570	7.1	mg/Kg	1	☼	6010C	Total/NA
Selenium	6.1		2.3	0.39	mg/Kg	1	☼	6010C	Total/NA
SiO2, Silica	2300		120	4.7	mg/Kg	1	☼	6010C	Total/NA
Sodium	180	J	570	22	mg/Kg	1	☼	6010C	Total/NA
Strontium	40		5.7	1.1	mg/Kg	1	☼	6010C	Total/NA
Titanium	450		5.7	0.14	mg/Kg	1	☼	6010C	Total/NA
Zinc	250		5.7	0.64	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.15		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	1.0		1.0	0.10	mg/L	1		6010C	TCLP
Boron	1.3		0.50	0.10	mg/L	1		6010C	TCLP
Cadmium	0.023		0.0020	0.00050	mg/L	1		6010C	TCLP
Lead	0.016	J	0.020	0.0030	mg/L	1		6010C	TCLP
Selenium	0.0097	J	0.025	0.0087	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB838485 (Continued)

Lab Sample ID: 480-128745-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	9100	H	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA
Phosphorus	370	B	8.2	3.3	mg/Kg	20	☼	SM 4500 P E	Total/NA
Sulfate	120		56	28	mg/Kg	1	☼	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	9.3	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	19.4	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB777879

Lab Sample ID: 480-128745-1

Date Collected: 12/06/17 11:45

Matrix: Solid

Date Received: 12/09/17 09:00

Percent Solids: 75.0

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	14000		23	6.8	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Arsenic	110		1.8	0.48	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Barium	190	F1	23	0.48	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Boron	140		23	0.56	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Cadmium	3.8		0.58	0.025	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Calcium	31000		580	27	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Chromium	58		1.2	0.088	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Copper	39		2.9	0.27	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Iron	38000		23	3.7	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Lead	49		1.2	0.23	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Magnesium	13000	F1	580	6.1	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Manganese	1100		1.8	0.098	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Molybdenum	40	F1	4.7	0.069	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Potassium	2100		580	7.2	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Selenium	7.5		2.3	0.40	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Silver	ND		1.2	0.074	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
SiO2, Silica	940	F1 F2	130	4.8	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Sodium	470	J	580	22	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Strontium	87	F1	5.8	1.1	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Titanium	570		5.8	0.14	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Zinc	300		5.8	0.65	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1

Method: 6010C - TCLP Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.052		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:11	1
Barium	1.6		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:11	1
Boron	1.5		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:11	1
Cadmium	0.031		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:11	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 23:11	1
Lead	0.0091	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:11	1
Selenium	0.0097	J	0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 23:11	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 23:11	1

Method: 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:21	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.12	0.021	mg/Kg	☼	12/29/17 16:00	01/02/18 11:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	14000	H	1000	380	mg/Kg			01/06/18 11:27	1
Phosphorus	360	B	9.0	3.6	mg/Kg	☼	12/21/17 20:30	12/21/17 20:30	20
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		9.9	9.9	mg/Kg		12/20/17 03:20	12/20/17 15:30	1
Total Sulfur	350	F1	230	230	mg/Kg	☼	01/05/18 10:17	01/05/18 12:53	1
pH	8.5	HF	0.1	0.1	SU			12/20/17 10:15	1
Temperature	19.3	HF	0.001	0.001	Degrees C			12/20/17 10:15	1

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	49	J	63	31	mg/Kg	☼		12/20/17 15:29	1

1

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12

13

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB808182

Lab Sample ID: 480-128745-2

Date Collected: 12/06/17 12:55

Matrix: Solid

Date Received: 12/09/17 09:00

Percent Solids: 78.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	11000		20	5.7	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Arsenic	220		1.5	0.40	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Barium	99		20	0.40	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Boron	210		20	0.47	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Cadmium	4.1		0.49	0.021	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Calcium	4500		490	23	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Chromium	83		0.98	0.074	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Copper	53		2.5	0.23	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Iron	38000		20	3.2	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Lead	130		0.98	0.20	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Magnesium	1500		490	5.1	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Manganese	70		1.5	0.083	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Molybdenum	31		3.9	0.058	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Potassium	2000		490	6.1	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Selenium	5.6		2.0	0.33	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Silver	ND		0.98	0.062	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
SiO2, Silica	2200		110	4.0	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Sodium	380	J	490	19	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Strontium	66		4.9	0.92	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Titanium	680		4.9	0.12	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Zinc	430		4.9	0.55	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1

Method: 6010C - TCLP Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.16		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:15	1
Barium	0.87	J	1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:15	1
Boron	1.9		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:15	1
Cadmium	0.016		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:15	1
Chromium	0.011	J	0.020	0.010	mg/L		12/21/17 10:54	12/26/17 23:15	1
Lead	0.015	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:15	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 23:15	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 23:15	1

Method: 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:23	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.13	0.023	mg/Kg	☼	12/29/17 16:00	01/02/18 11:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	18000	H	1000	380	mg/Kg			01/06/18 11:33	1
Phosphorus	580	B	8.4	3.4	mg/Kg	☼	12/21/17 20:30	12/21/17 20:30	20
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		9.9	9.9	mg/Kg		12/20/17 03:20	12/20/17 15:30	1
Total Sulfur	380		210	210	mg/Kg	☼	01/05/18 10:17	01/05/18 12:53	1
pH	8.3	HF	0.1	0.1	SU			12/20/17 10:15	1
Temperature	19.3	HF	0.001	0.001	Degrees C			12/20/17 10:15	1

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	57	J	64	32	mg/Kg	☼		12/20/17 15:53	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB838485

Lab Sample ID: 480-128745-3

Date Collected: 12/06/17 10:10

Matrix: Solid

Date Received: 12/09/17 09:00

Percent Solids: 82.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	7000		23	6.6	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Arsenic	92		1.7	0.47	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Barium	76		23	0.47	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Boron	110		23	0.55	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Cadmium	3.9		0.57	0.024	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Calcium	8600		570	26	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Chromium	54		1.1	0.086	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Copper	41		2.9	0.26	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Iron	30000		23	3.7	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Lead	44		1.1	0.23	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Magnesium	1700		570	6.0	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Manganese	110		1.7	0.096	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Molybdenum	73		4.6	0.068	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Potassium	1200		570	7.1	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Selenium	6.1		2.3	0.39	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Silver	ND		1.1	0.072	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
SiO ₂ , Silica	2300		120	4.7	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Sodium	180	J	570	22	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Strontium	40		5.7	1.1	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Titanium	450		5.7	0.14	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Zinc	250		5.7	0.64	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1

Method: 6010C - TCLP Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.15		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:18	1
Barium	1.0		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:18	1
Boron	1.3		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:18	1
Cadmium	0.023		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:18	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 23:18	1
Lead	0.016	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:18	1
Selenium	0.0097	J	0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 23:18	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 23:18	1

Method: 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:24	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.14	0.025	mg/Kg	☼	12/29/17 16:00	01/02/18 11:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9100	H	1000	380	mg/Kg			01/06/18 11:39	1
Phosphorus	370	B	8.2	3.3	mg/Kg	☼	12/21/17 20:30	12/21/17 20:30	20
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		9.9	9.9	mg/Kg		12/20/17 03:20	12/20/17 15:30	1
Total Sulfur	ND		190	190	mg/Kg	☼	01/05/18 10:17	01/05/18 12:53	1
pH	9.3	HF	0.1	0.1	SU			12/20/17 10:15	1
Temperature	19.4	HF	0.001	0.001	Degrees C			12/20/17 10:15	1

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	120		56	28	mg/Kg	☼		12/20/17 15:32	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-309610/1-A
Matrix: Solid
Analysis Batch: 309787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		20	5.8	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Arsenic	ND		1.5	0.41	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Barium	ND		20	0.41	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Boron	ND		20	0.48	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Cadmium	ND		0.50	0.021	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Calcium	ND		500	23	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Chromium	ND		1.0	0.075	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Copper	ND		2.5	0.23	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Iron	ND		20	3.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Lead	ND		1.0	0.20	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Magnesium	ND		500	5.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Manganese	ND		1.5	0.084	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Molybdenum	ND		4.0	0.059	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Potassium	ND		500	6.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Selenium	ND		2.0	0.34	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Silver	ND		1.0	0.063	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
SiO2, Silica	ND		110	4.1	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Sodium	ND		500	19	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Strontium	ND		5.0	0.93	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Titanium	ND		5.0	0.12	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Zinc	ND		5.0	0.56	mg/Kg		12/29/17 14:00	01/02/18 11:43	1

Lab Sample ID: LCS 240-309610/2-A
Matrix: Solid
Analysis Batch: 309787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	200	190		mg/Kg		95	80 - 120
Arsenic	200	198		mg/Kg		99	80 - 120
Barium	200	196		mg/Kg		98	80 - 120
Boron	100	98.7		mg/Kg		99	80 - 120
Cadmium	5.00	4.98		mg/Kg		100	80 - 120
Calcium	5000	4870		mg/Kg		97	80 - 120
Chromium	20.0	19.5		mg/Kg		97	80 - 120
Copper	25.0	24.6		mg/Kg		98	80 - 120
Iron	100	102		mg/Kg		102	80 - 120
Lead	50.0	48.2		mg/Kg		96	80 - 120
Magnesium	5000	4880		mg/Kg		98	80 - 120
Manganese	50.0	49.1		mg/Kg		98	80 - 120
Molybdenum	100	97.8		mg/Kg		98	80 - 120
Potassium	5000	4790		mg/Kg		96	80 - 120
Selenium	200	198		mg/Kg		99	80 - 120
Silver	5.00	4.99		mg/Kg		100	80 - 120
SiO2, Silica	214	231		mg/Kg		108	80 - 120
Sodium	5000	4860		mg/Kg		97	80 - 120
Strontium	100	97.0		mg/Kg		97	80 - 120
Titanium	100	97.2		mg/Kg		97	80 - 120
Zinc	50.0	49.5		mg/Kg		99	80 - 120

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-128745-1 MS

Matrix: Solid

Analysis Batch: 309787

Client Sample ID: COMP SB777879

Prep Type: Total/NA

Prep Batch: 309610

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits	%Rec.
				Result	Qualifier					
Aluminum	14000		238	12500	4	mg/Kg	☼	-708	75 - 125	
Arsenic	110		238	317		mg/Kg	☼	86	75 - 125	
Barium	190	F1	238	348	F1	mg/Kg	☼	67	75 - 125	
Boron	140		119	266		mg/Kg	☼	103	75 - 125	
Cadmium	3.8		5.95	9.58		mg/Kg	☼	97	75 - 125	
Calcium	31000		5950	10400	4	mg/Kg	☼	-344	75 - 125	
Chromium	58		23.8	87.6		mg/Kg	☼	123	75 - 125	
Copper	39		29.7	71.9		mg/Kg	☼	112	75 - 125	
Iron	38000		119	43300	4	mg/Kg	☼	4195	75 - 125	
Lead	49		59.5	114		mg/Kg	☼	109	75 - 125	
Magnesium	13000	F1	5950	7640	F1	mg/Kg	☼	-91	75 - 125	
Manganese	1100		59.5	137	4	mg/Kg	☼	-1589	75 - 125	
Molybdenum	40	F1	119	122	F1	mg/Kg	☼	69	75 - 125	
Potassium	2100		5950	7090		mg/Kg	☼	84	75 - 125	
Selenium	7.5		238	202		mg/Kg	☼	82	75 - 125	
Silver	ND		5.95	5.08		mg/Kg	☼	85	75 - 125	
SiO2, Silica	940	F1 F2	255	6020	F1	mg/Kg	☼	1991	75 - 125	
Sodium	470	J	5950	5320		mg/Kg	☼	81	75 - 125	
Strontium	87	F1	119	143	F1	mg/Kg	☼	47	75 - 125	
Titanium	570		119	783	4	mg/Kg	☼	175	75 - 125	
Zinc	300		59.5	438	4	mg/Kg	☼	227	75 - 125	

Lab Sample ID: 480-128745-1 MSD

Matrix: Solid

Analysis Batch: 309787

Client Sample ID: COMP SB777879

Prep Type: Total/NA

Prep Batch: 309610

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
Aluminum	14000		238	11900	4	mg/Kg	☼	-952	75 - 125	5	20
Arsenic	110		238	296		mg/Kg	☼	77	75 - 125	7	20
Barium	190	F1	238	329	F1	mg/Kg	☼	59	75 - 125	6	20
Boron	140		119	247		mg/Kg	☼	87	75 - 125	7	20
Cadmium	3.8		5.95	9.08		mg/Kg	☼	89	75 - 125	5	20
Calcium	31000		5950	9270	4	mg/Kg	☼	-363	75 - 125	11	20
Chromium	58		23.8	83.9		mg/Kg	☼	108	75 - 125	4	20
Copper	39		29.7	67.6		mg/Kg	☼	97	75 - 125	6	20
Iron	38000		119	41700	4	mg/Kg	☼	2877	75 - 125	4	20
Lead	49		59.5	105		mg/Kg	☼	95	75 - 125	7	20
Magnesium	13000	F1	5950	6970	F1	mg/Kg	☼	-102	75 - 125	9	20
Manganese	1100		59.5	133	4	mg/Kg	☼	-1597	75 - 125	3	20
Molybdenum	40	F1	119	114	F1	mg/Kg	☼	63	75 - 125	7	20
Potassium	2100		5950	6680		mg/Kg	☼	77	75 - 125	6	20
Selenium	7.5		238	191		mg/Kg	☼	77	75 - 125	6	20
Silver	ND		5.95	4.84		mg/Kg	☼	81	75 - 125	5	20
SiO2, Silica	940	F1 F2	255	3360	F1 F2	mg/Kg	☼	949	75 - 125	57	20
Sodium	470	J	5950	4950		mg/Kg	☼	75	75 - 125	7	20
Strontium	87	F1	119	131	F1	mg/Kg	☼	37	75 - 125	9	20
Titanium	570		119	738	4	mg/Kg	☼	138	75 - 125	6	20
Zinc	300		59.5	422	4	mg/Kg	☼	200	75 - 125	4	20

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 6010C - TCLP Metals (ICP)

Lab Sample ID: MB 480-393125/2-A
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 22:57	1
Barium	ND		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 22:57	1
Boron	ND		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 22:57	1
Cadmium	ND		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 22:57	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 22:57	1
Lead	ND		0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 22:57	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 22:57	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 22:57	1

Lab Sample ID: LCS 480-393125/3-A
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393125

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.20	1.27		mg/L		106	80 - 120
Barium	1.20	1.15		mg/L		96	80 - 120
Boron	0.200	0.224	J	mg/L		112	80 - 120
Cadmium	1.20	1.22		mg/L		102	80 - 120
Chromium	1.20	1.20		mg/L		100	80 - 120
Lead	1.20	1.24		mg/L		103	80 - 120
Selenium	1.20	1.28		mg/L		106	80 - 120
Silver	1.05	1.10		mg/L		105	80 - 120

Lab Sample ID: LB 480-392921/1-B
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 393125

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 22:53	1
Barium	ND		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 22:53	1
Boron	ND		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 22:53	1
Cadmium	ND		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 22:53	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 22:53	1
Lead	ND		0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 22:53	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 22:53	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 22:53	1

Lab Sample ID: 480-128745-3 MS
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: COMP SB838485
Prep Type: TCLP
Prep Batch: 393125

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.15		1.20	1.35		mg/L		100	75 - 125
Barium	1.0		1.20	2.07		mg/L		86	75 - 125
Boron	1.3		0.200	1.45	4	mg/L		57	75 - 125
Cadmium	0.023		1.20	1.21		mg/L		99	75 - 125
Chromium	ND		1.20	1.12		mg/L		93	75 - 125
Lead	0.016	J	1.20	1.22		mg/L		100	75 - 125
Selenium	0.0097	J	1.20	1.21		mg/L		100	75 - 125

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 6010C - TCLP Metals (ICP) (Continued)

Lab Sample ID: 480-128745-3 MS
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: COMP SB838485
Prep Type: TCLP
Prep Batch: 393125

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Silver	ND		1.05	1.07		mg/L		102	75 - 125

Lab Sample ID: 480-128745-3 MSD
Matrix: Solid
Analysis Batch: 393669

Client Sample ID: COMP SB838485
Prep Type: TCLP
Prep Batch: 393125

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.15		1.20	1.39		mg/L		103	75 - 125	3	20
Barium	1.0		1.20	2.12		mg/L		90	75 - 125	2	20
Boron	1.3		0.200	1.49	4	mg/L		73	75 - 125	2	20
Cadmium	0.023		1.20	1.23		mg/L		101	75 - 125	2	20
Chromium	ND		1.20	1.13		mg/L		94	75 - 125	1	20
Lead	0.016	J	1.20	1.25		mg/L		103	75 - 125	2	20
Selenium	0.0097	J	1.20	1.25		mg/L		104	75 - 125	3	20
Silver	ND		1.05	1.08		mg/L		103	75 - 125	1	20

Method: 7470A - TCLP Mercury

Lab Sample ID: MB 480-393199/2-A
Matrix: Solid
Analysis Batch: 393379

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393199

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:16	1

Lab Sample ID: LCS 480-393199/3-A
Matrix: Solid
Analysis Batch: 393379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00668	0.00642		mg/L		96	80 - 120

Lab Sample ID: LB 480-392921/1-C
Matrix: Solid
Analysis Batch: 393379

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 393199

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:14	1

Lab Sample ID: 480-128745-3 MS
Matrix: Solid
Analysis Batch: 393379

Client Sample ID: COMP SB838485
Prep Type: TCLP
Prep Batch: 393199

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.00668	0.00638		mg/L		96	80 - 120

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 7470A - TCLP Mercury (Continued)

Lab Sample ID: 480-128745-3 MSD

Matrix: Solid

Analysis Batch: 393379

Client Sample ID: COMP SB838485

Prep Type: TCLP

Prep Batch: 393199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00668	0.00640		mg/L		96	80 - 120	0	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 240-309619/1-A

Matrix: Solid

Analysis Batch: 309788

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 309619

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.10	0.018	mg/Kg		12/29/17 16:00	01/02/18 11:13	1

Lab Sample ID: LCS 240-309619/2-A

Matrix: Solid

Analysis Batch: 309788

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 309619

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.833	0.868		mg/Kg		104	80 - 120

Lab Sample ID: 480-128745-1 MS

Matrix: Solid

Analysis Batch: 309788

Client Sample ID: COMP SB777879

Prep Type: Total/NA

Prep Batch: 309619

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND		0.238	0.250		mg/Kg	☼	105	80 - 120

Lab Sample ID: 480-128745-1 MSD

Matrix: Solid

Analysis Batch: 309788

Client Sample ID: COMP SB777879

Prep Type: Total/NA

Prep Batch: 309619

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		0.238	0.245		mg/Kg	☼	103	80 - 120	2	20

Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 480-392925/1-A

Matrix: Solid

Analysis Batch: 393221

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392925

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		10	10	mg/Kg		12/20/17 03:20	12/20/17 15:30	1

Lab Sample ID: LCS 480-392925/2-A

Matrix: Solid

Analysis Batch: 393221

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide, Reactive	740	741		mg/Kg		100	10 - 100

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: 9038 - Sulfur, Total

Lab Sample ID: MB 680-508540/1-A
Matrix: Solid
Analysis Batch: 508563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 508540

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfur	ND		170	170	mg/Kg		01/05/18 10:17	01/05/18 12:53	1

Lab Sample ID: LCS 680-508540/2-A
Matrix: Solid
Analysis Batch: 508563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 508540

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfur	2000	1590		mg/Kg		79	50 - 120

Lab Sample ID: 480-128745-1 MS
Matrix: Solid
Analysis Batch: 508563

Client Sample ID: COMP SB777879
Prep Type: Total/NA
Prep Batch: 508540

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfur	350	F1	681	569	F1	mg/Kg	☼	33	50 - 120

Lab Sample ID: 480-128745-1 MSD
Matrix: Solid
Analysis Batch: 508563

Client Sample ID: COMP SB777879
Prep Type: Total/NA
Prep Batch: 508540

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Sulfur	350	F1	627	491	F1	mg/Kg	☼	23	50 - 120	15	30

Lab Sample ID: 480-128745-2 DU
Matrix: Solid
Analysis Batch: 508563

Client Sample ID: COMP SB808182
Prep Type: Total/NA
Prep Batch: 508540

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Sulfur	380			279	F5	mg/Kg	☼			30	10

Method: 9045D - pH

Lab Sample ID: LCS 480-393230/1
Matrix: Solid
Analysis Batch: 393230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 480-393230/23
Matrix: Solid
Analysis Batch: 393230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: D516-90, 02 - Sulfate

Lab Sample ID: MB 480-393011/166
Matrix: Solid
Analysis Batch: 393011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	2.5	mg/Kg			12/20/17 15:17	1

Lab Sample ID: MB 480-393011/197
Matrix: Solid
Analysis Batch: 393011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	2.5	mg/Kg			12/20/17 15:47	1

Lab Sample ID: LCS 480-393011/165
Matrix: Solid
Analysis Batch: 393011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	28.4		mg/Kg		95	90 - 110

Lab Sample ID: LCS 480-393011/196
Matrix: Solid
Analysis Batch: 393011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	28.4		mg/Kg		95	90 - 110

Lab Sample ID: MB 480-392972/1-A
Matrix: Solid
Analysis Batch: 393011

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		50	25	mg/Kg			12/20/17 15:29	1

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-125233/6
Matrix: Solid
Analysis Batch: 125233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	380	mg/Kg			01/06/18 10:48	1

Lab Sample ID: LCS 200-125233/7
Matrix: Solid
Analysis Batch: 125233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	9260	9250		mg/Kg		100	75 - 125

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method: SM 4500 P E - Phosphorus

Lab Sample ID: MB 480-393255/1-A
Matrix: Solid
Analysis Batch: 393256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.157	J	0.36	0.14	mg/Kg		12/21/17 20:30	12/21/17 20:30	1

Lab Sample ID: LCSSRM 480-393255/2-A
Matrix: Solid
Analysis Batch: 393256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393255

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Phosphorus	1620	1140		mg/Kg		70.4	28.2 - 171.6

Lab Sample ID: 480-128745-3 MS
Matrix: Solid
Analysis Batch: 393256

Client Sample ID: COMP SB838485
Prep Type: Total/NA
Prep Batch: 393255

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phosphorus	370	B	492	870		mg/Kg	☼	102	52 - 148

Lab Sample ID: 480-128745-3 MSD
Matrix: Solid
Analysis Batch: 393256

Client Sample ID: COMP SB838485
Prep Type: Total/NA
Prep Batch: 393255

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Phosphorus	370	B	492	813		mg/Kg	☼	90	52 - 148	7	20

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Metals

Prep Batch: 309610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	3050B	
480-128745-2	COMP SB808182	Total/NA	Solid	3050B	
480-128745-3	COMP SB838485	Total/NA	Solid	3050B	
MB 240-309610/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 240-309610/2-A	Lab Control Sample	Total/NA	Solid	3050B	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	3050B	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	3050B	

Prep Batch: 309619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7471B	
480-128745-2	COMP SB808182	Total/NA	Solid	7471B	
480-128745-3	COMP SB838485	Total/NA	Solid	7471B	
MB 240-309619/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 240-309619/2-A	Lab Control Sample	Total/NA	Solid	7471B	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	7471B	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	7471B	

Analysis Batch: 309787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	6010C	309610
480-128745-2	COMP SB808182	Total/NA	Solid	6010C	309610
480-128745-3	COMP SB838485	Total/NA	Solid	6010C	309610
MB 240-309610/1-A	Method Blank	Total/NA	Solid	6010C	309610
LCS 240-309610/2-A	Lab Control Sample	Total/NA	Solid	6010C	309610
480-128745-1 MS	COMP SB777879	Total/NA	Solid	6010C	309610
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	6010C	309610

Analysis Batch: 309788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7471B	309619
480-128745-2	COMP SB808182	Total/NA	Solid	7471B	309619
480-128745-3	COMP SB838485	Total/NA	Solid	7471B	309619
MB 240-309619/1-A	Method Blank	Total/NA	Solid	7471B	309619
LCS 240-309619/2-A	Lab Control Sample	Total/NA	Solid	7471B	309619
480-128745-1 MS	COMP SB777879	Total/NA	Solid	7471B	309619
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	7471B	309619

Leach Batch: 392921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	1311	
480-128745-2	COMP SB808182	TCLP	Solid	1311	
480-128745-3	COMP SB838485	TCLP	Solid	1311	
LB 480-392921/1-B	Method Blank	TCLP	Solid	1311	
LB 480-392921/1-C	Method Blank	TCLP	Solid	1311	
480-128745-3 MS	COMP SB838485	TCLP	Solid	1311	
480-128745-3 MSD	COMP SB838485	TCLP	Solid	1311	

Prep Batch: 393125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	3010A	392921

TestAmerica Buffalo

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Metals (Continued)

Prep Batch: 393125 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-2	COMP SB808182	TCLP	Solid	3010A	392921
480-128745-3	COMP SB838485	TCLP	Solid	3010A	392921
LB 480-392921/1-B	Method Blank	TCLP	Solid	3010A	392921
MB 480-393125/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-393125/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-128745-3 MS	COMP SB838485	TCLP	Solid	3010A	392921
480-128745-3 MSD	COMP SB838485	TCLP	Solid	3010A	392921

Prep Batch: 393199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	7470A	392921
480-128745-2	COMP SB808182	TCLP	Solid	7470A	392921
480-128745-3	COMP SB838485	TCLP	Solid	7470A	392921
LB 480-392921/1-C	Method Blank	TCLP	Solid	7470A	392921
MB 480-393199/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 480-393199/3-A	Lab Control Sample	Total/NA	Solid	7470A	
480-128745-3 MS	COMP SB838485	TCLP	Solid	7470A	392921
480-128745-3 MSD	COMP SB838485	TCLP	Solid	7470A	392921

Analysis Batch: 393379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	7470A	393199
480-128745-2	COMP SB808182	TCLP	Solid	7470A	393199
480-128745-3	COMP SB838485	TCLP	Solid	7470A	393199
LB 480-392921/1-C	Method Blank	TCLP	Solid	7470A	393199
MB 480-393199/2-A	Method Blank	Total/NA	Solid	7470A	393199
LCS 480-393199/3-A	Lab Control Sample	Total/NA	Solid	7470A	393199
480-128745-3 MS	COMP SB838485	TCLP	Solid	7470A	393199
480-128745-3 MSD	COMP SB838485	TCLP	Solid	7470A	393199

Analysis Batch: 393669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	6010C	393125
480-128745-2	COMP SB808182	TCLP	Solid	6010C	393125
480-128745-3	COMP SB838485	TCLP	Solid	6010C	393125
LB 480-392921/1-B	Method Blank	TCLP	Solid	6010C	393125
MB 480-393125/2-A	Method Blank	Total/NA	Solid	6010C	393125
LCS 480-393125/3-A	Lab Control Sample	Total/NA	Solid	6010C	393125
480-128745-3 MS	COMP SB838485	TCLP	Solid	6010C	393125
480-128745-3 MSD	COMP SB838485	TCLP	Solid	6010C	393125

General Chemistry

Analysis Batch: 125233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	Lloyd Kahn	
480-128745-2	COMP SB808182	Total/NA	Solid	Lloyd Kahn	
480-128745-3	COMP SB838485	Total/NA	Solid	Lloyd Kahn	
MB 200-125233/6	Method Blank	Total/NA	Solid	Lloyd Kahn	
LCS 200-125233/7	Lab Control Sample	Total/NA	Solid	Lloyd Kahn	

TestAmerica Buffalo

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry (Continued)

Analysis Batch: 392832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	Moisture	
480-128745-2	COMP SB808182	Total/NA	Solid	Moisture	
480-128745-3	COMP SB838485	Total/NA	Solid	Moisture	

Prep Batch: 392925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7.3.4	
480-128745-2	COMP SB808182	Total/NA	Solid	7.3.4	
480-128745-3	COMP SB838485	Total/NA	Solid	7.3.4	
MB 480-392925/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 480-392925/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	

Leach Batch: 392972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Soluble	Solid	DI Leach	
480-128745-2	COMP SB808182	Soluble	Solid	DI Leach	
480-128745-3	COMP SB838485	Soluble	Solid	DI Leach	
MB 480-392972/1-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 393011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Soluble	Solid	D516-90, 02	392972
480-128745-2	COMP SB808182	Soluble	Solid	D516-90, 02	392972
480-128745-3	COMP SB838485	Soluble	Solid	D516-90, 02	392972
MB 480-392972/1-A	Method Blank	Soluble	Solid	D516-90, 02	392972
MB 480-393011/166	Method Blank	Total/NA	Solid	D516-90, 02	
MB 480-393011/197	Method Blank	Total/NA	Solid	D516-90, 02	
LCS 480-393011/165	Lab Control Sample	Total/NA	Solid	D516-90, 02	
LCS 480-393011/196	Lab Control Sample	Total/NA	Solid	D516-90, 02	

Analysis Batch: 393221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9034	392925
480-128745-2	COMP SB808182	Total/NA	Solid	9034	392925
480-128745-3	COMP SB838485	Total/NA	Solid	9034	392925
MB 480-392925/1-A	Method Blank	Total/NA	Solid	9034	392925
LCS 480-392925/2-A	Lab Control Sample	Total/NA	Solid	9034	392925

Analysis Batch: 393230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9045D	
480-128745-2	COMP SB808182	Total/NA	Solid	9045D	
480-128745-3	COMP SB838485	Total/NA	Solid	9045D	
LCS 480-393230/1	Lab Control Sample	Total/NA	Solid	9045D	
LCS 480-393230/23	Lab Control Sample	Total/NA	Solid	9045D	

Prep Batch: 393255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	SM 4500 P B	
480-128745-2	COMP SB808182	Total/NA	Solid	SM 4500 P B	
480-128745-3	COMP SB838485	Total/NA	Solid	SM 4500 P B	

TestAmerica Buffalo

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry (Continued)

Prep Batch: 393255 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-393255/1-A	Method Blank	Total/NA	Solid	SM 4500 P B	
LCSSRM 480-393255/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 P B	
480-128745-3 MS	COMP SB838485	Total/NA	Solid	SM 4500 P B	
480-128745-3 MSD	COMP SB838485	Total/NA	Solid	SM 4500 P B	

Analysis Batch: 393256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	SM 4500 P E	393255
480-128745-2	COMP SB808182	Total/NA	Solid	SM 4500 P E	393255
480-128745-3	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255
MB 480-393255/1-A	Method Blank	Total/NA	Solid	SM 4500 P E	393255
LCSSRM 480-393255/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 P E	393255
480-128745-3 MS	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255
480-128745-3 MSD	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255

Prep Batch: 508540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	5050	
480-128745-2	COMP SB808182	Total/NA	Solid	5050	
480-128745-3	COMP SB838485	Total/NA	Solid	5050	
MB 680-508540/1-A	Method Blank	Total/NA	Solid	5050	
LCS 680-508540/2-A	Lab Control Sample	Total/NA	Solid	5050	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	5050	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	5050	
480-128745-2 DU	COMP SB808182	Total/NA	Solid	5050	

Analysis Batch: 508563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-2	COMP SB808182	Total/NA	Solid	9038	508540
480-128745-3	COMP SB838485	Total/NA	Solid	9038	508540
MB 680-508540/1-A	Method Blank	Total/NA	Solid	9038	508540
LCS 680-508540/2-A	Lab Control Sample	Total/NA	Solid	9038	508540
480-128745-1 MS	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-2 DU	COMP SB808182	Total/NA	Solid	9038	508540

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-18
California	State Program	9	2931	04-01-18
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
Georgia	State Program	4	10026 (NY)	03-31-18
Georgia	State Program	4	956	03-31-18
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-18 *
Kentucky (DW)	State Program	4	90029	12-31-17 *
Kentucky (UST)	State Program	4	30	03-31-18
Kentucky (WW)	State Program	4	90029	12-31-18
Louisiana	NELAP	6	02031	06-30-18
Maine	State Program	1	NY00044	12-04-18
Maryland	State Program	3	294	03-31-18
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-18
Minnesota	NELAP	5	036-999-337	12-31-18
New Hampshire	NELAP	1	2337	11-17-18
New Jersey	NELAP	2	NY455	06-30-18
New York	NELAP	2	10026	03-31-18
North Dakota	State Program	8	R-176	03-31-18
Oklahoma	State Program	6	9421	08-31-18
Oregon	NELAP	10	NY200003	06-09-18
Pennsylvania	NELAP	3	68-00281	07-31-18
Rhode Island	State Program	1	LAO00328	12-30-17 *
Tennessee	State Program	4	TN02970	03-31-18
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	11-26-17 *
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-18 *
Wisconsin	State Program	5	998310390	08-31-18

Laboratory: TestAmerica Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-18
Florida	NELAP	4	E87467	06-30-18
L-A-B	DoD ELAP		L2336	02-25-20
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-18
New Hampshire	NELAP	1	2006	12-18-18
New Jersey	NELAP	2	VT972	06-30-18
New York	NELAP	2	10391	04-01-18
Pennsylvania	NELAP	3	68-00489	04-30-18
Rhode Island	State Program	1	LAO00298	12-30-17 *
US Fish & Wildlife	Federal		LE-058448-0	07-31-18
USDA	Federal		P330-11-00093	12-05-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Buffalo

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Burlington (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Vermont	State Program	1	VT-4000	12-31-17 *
Virginia	NELAP	3	460209	12-14-18

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17 *
Florida	NELAP	4	E87225	06-30-18
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-18 *
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17 *
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-18 *
West Virginia DEP	State Program	3	210	12-31-18

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	09-22-19
Arizona	State Program	9	AZ808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____
 Drinking Water? Yes No

Chain of Custody Record

TAL-4124 (1007)

Client: NIPSCO (Nisource)
Address: 246 BAILLY STATION ROAD, CHESTERTON, IN
Project Name and Location (State): BAILLY GENERATING STATION
Contract/Purchase Order/Quote No.:

Project Manager: RUSSELL JOHNSON
Telephone Number (Area Code)/Fax Number: 978-392-5336
Site Contact: D. SULLIVAN
Lab Contact: J. SCHOVE
Carrier/Maybill Number: 8060 3926 5312

Date: 12-19-17
Chain of Custody Number: 278861
Page: 1 of 1

Analysis (Attach list if more space is needed): BR

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives						Sulfate	REACT. SULFIDE	TCLP REACT B + PH	ions/ script	
			Air	Aqueous	Sed	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH					ZnAc/NaOH
COMP 50777079	12/6/17	1145		X		X							X	X	X	Zea 003 jars
COMP 50809182	12/6/17	1255		X		X							X	X	X	Zea 003 jars
COMP 50838485	12/6/17	1010		X		X							X	X	X	Zea 003 jars
																B = boron

Sample Disposal: Disposal By Lab Archive For _____ Months
 (A fee may be assessed if samples are retained longer than 1 month)

QC Requirements (Specify): Received by: *Chun Zhou* TA 12/20/17 1650

1. Relinquished By: KEVIN MILNER (by RCP) Date: 12-8-17 Time: ---
2. Relinquished By: FEDEX 00862703 6143 Date: 12-9-17 Time: 1110
3. Relinquished By: *Thom G. John* Date: 12-19-17 Time: 1150

Received By: 1. FEDEX 00862703 6143 Date: 12-8-17 Time: ---
 2. *Thom G. John (RCP)* Date: 12-9-17 Time: 1110
 3. FEDEX Date: 12-19-17 Time: 1600

Comments: Samples refrigerated at AMEC FOSTER WHEELER from 12-9-17 to 12-15-17 Temp 23# ICE

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy



TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record



No: 39738.1



480-128745 Chain of Custody

Client Information (Sub Contract Lab)
 Shipping/Receiving
 Company: TestAmerica Laboratories, Inc.
 Address: 30 Community Drive, Suite 11,
 South Burlington
 State, Zip: VT, 05403
 Phone: 802-660-1990(Tel) 802-660-1919(Fax)
 Email:
 Project Name: Bailly Generating Station
 Site: Bailly Generating Station

Sampler: Lab PVI: Schove, John R
 Phone: E-Mail: john.schove@testamerica.com

Due Date Requested: 12/29/2017
 TAT Requested (days):
 PO #:
 WO #:
 Project #: 48003007
 SOW #:

Accreditations Required (See note):

Analysis Requested

A - HCL	M - Hexane
B - NaOH	N - Nitrite
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2SO4
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water, B=BI-Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	Lloyd Kahn/Routine Lloyd Kahn	Total Number of Containers	Special Instructions/Note:
--	-------------	-------------	------------------------------	--	-----------------------------------	---------------------------	-------------------------------	----------------------------	----------------------------

COMP SB77879 (480-128745-1)	12/6/17	11:45 Eastern	Solid	Solid	X	X		1	
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern	Solid	Solid	X	X		1	
COMP SB838485 (480-128745-3)	12/6/17	10:10 Eastern	Solid	Solid	X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by:

Relinquished by: *Carabelle* Date: 12/19/17 16:00

Relinquished by: Company: DAB

Relinquished by: Company: DAB

Relinquished by: Company: DAB

Cooler Temperature(s) °C and Other Remarks: 2.4

Custody Seal No.: 099433

Yes Δ No

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Months

Special Instructions/QC Requirements:

Method of Shipment:

Date/Time: 12/20/17

Date/Time: 10:40

Date/Time:

Date/Time:

Company: DAB

Company:

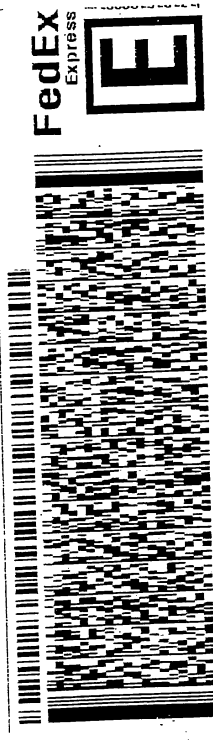
Company:



ORIGIN ID:DKKA (716) 691-2600
CHAR BRONSON
TEST AMERICA
10 HAZELWOOD
AMHERST, NY 14228
UNITED STATES US

SHIP DATE: 19DEC17
ACT WT: 11.40 LB
CAD: 846554/CAFE3108
DIMS: 15X13X10 IN
BILL RECIPIENT

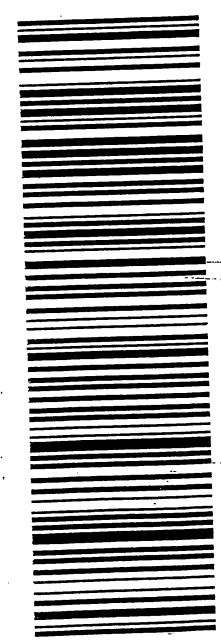
TO **SAMPLE MGT.**
TA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
REF: BURLINGTON
DEPT: SAMPLE CONTROL



TRK# 5657 0123 5923
0201

WED - 20 DEC 3:00P
STANDARD OVERNIGHT

XH BTVA 05403
VT-US BTV



Part # 150148-434 RIT EXP 09/18 *



Chain of Custody Record



Client Information (Sub Contract Lab) Client Contact: TestAmerica Laboratories, Inc. Address: 4101 Shuffel Street NW, City: North Canton State, Zip: OH, 44720 Phone: 330-497-9396(Tel) 330-497-0772(Fax) Email:		Lab PM: Schove, John R. E-Mail: john.schove@testamericainc.com Shipping/Receiving State of Origin: Indiana Accreditations Required (See note):	
Due Date Requested: 12/29/2017 TAT Requested (days):		Carmer Tracking No(s): 480-39740.1 Page: Page 1 of 1 Job #: 480-128745-1	
Project #: 48003007 SSOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Site: Bailly Generating Station		Analysis Requested	
Sample Identification - Client ID (Lab ID)		Total Number of Containers	
COMP SB777879 (480-128745-1)	12/6/17	11:45 Eastern	1
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern	1
COMP SB838485 (480-128745-3)	12/6/17	10:10 Eastern	1
Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>		Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>	
Matrix (W=Water, S=Solid, C=Cement, B=Biological, T=Tissue, A=Asp)		7471B/7471B Prep Mercury	
Sample Type (C=Comp, G=Grab)		6010C/3050B CCR Metals List	
Sample Time		Preservation Code:	
Sample Date		Special Instructions/Note: C34	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: *[Signature]* Date/Time: 12/27/17 16:00 Company: TDS
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: _____ Custody Seal No.: _____
 Δ Yes Δ No
 Cooler Temperature(s) °C and Other Remarks:



TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client TA Buffalo Site Name _____ Cooler unpacked by: [Signature]

Cooler Received on 12/28/17 Opened on 12/28/17

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box _____ Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

See Multiple Cooler Form

1. Cooler temperature upon receipt

IR GUN# IR-8 (CF -0.3 °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.3 °C

IR GUN #36 (CF +0.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN # 627 (CF -1.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels be reconciled with the COC? Yes No

9. Were correct bottle(s) used for the test(s) indicated? Yes No

10. Sufficient quantity received to perform indicated analyses? Yes No

11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC730269

13. Were VOAs on the COC? Yes No

14. Were air bubbles >6 mm in any VOA vials? Yes ← Larger than this. Yes No NA

15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

16. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Chain of Custody Record



Client Information (Sub Contract Lab)		Lab PM: Schove, John R	Carmer Tracking No(s): 480-39741.1
Shipping/Receiving		E-Mail: john.schove@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		State of Origin: Indiana	Job #: 480-128745-1
Address: 5102 LaRoche Avenue, Savannah, GA, 31404		Preservation Codes:	
Phone: 912-354-7858(Tel) 912-352-0165(Fax)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project Name: Baily Generating Station		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Site: Baily Generating Station		Accreditations Required (See note):	
Sample Identification - Client ID (Lab ID)		Analysis Requested	
COMP SB777879 (480-128745-1)	Sample Date: 12/6/17	Sample Time: 11:45 Eastern	Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/>
COMP SB808182 (480-128745-2)	Sample Date: 12/6/17	Sample Time: 12:55 Eastern	Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/>
COMP SB838485 (480-128745-3)	Sample Date: 12/6/17	Sample Time: 10:10 Eastern	9038 Total S/5050 Sulfur, Total: <input checked="" type="checkbox"/>
			Total Number of Containers: 1
			Special Instructions/Note:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: *W. W. W.* Date/Time: 12/27/17 1600 Company: TAB Company: TASA V

Relinquished by: _____ Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Δ No Δ No
 Cooler Temperature(s) °C and Other Remarks: 2.1 J. 2.5



Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-128745-1

Login Number: 128745

List Source: TestAmerica Buffalo

List Number: 1

Creator: Wallace, Cameron

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	Split off volume for Canton, Savannah, Burlington
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-128745-1

Login Number: 128745
List Number: 2
Creator: Hahl, Victoria L

List Source: TestAmerica Burlington
List Creation: 12/20/17 11:31 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	099433
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4 °C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-128745-1

Login Number: 128745

List Number: 3

Creator: Hopkins, Ashley

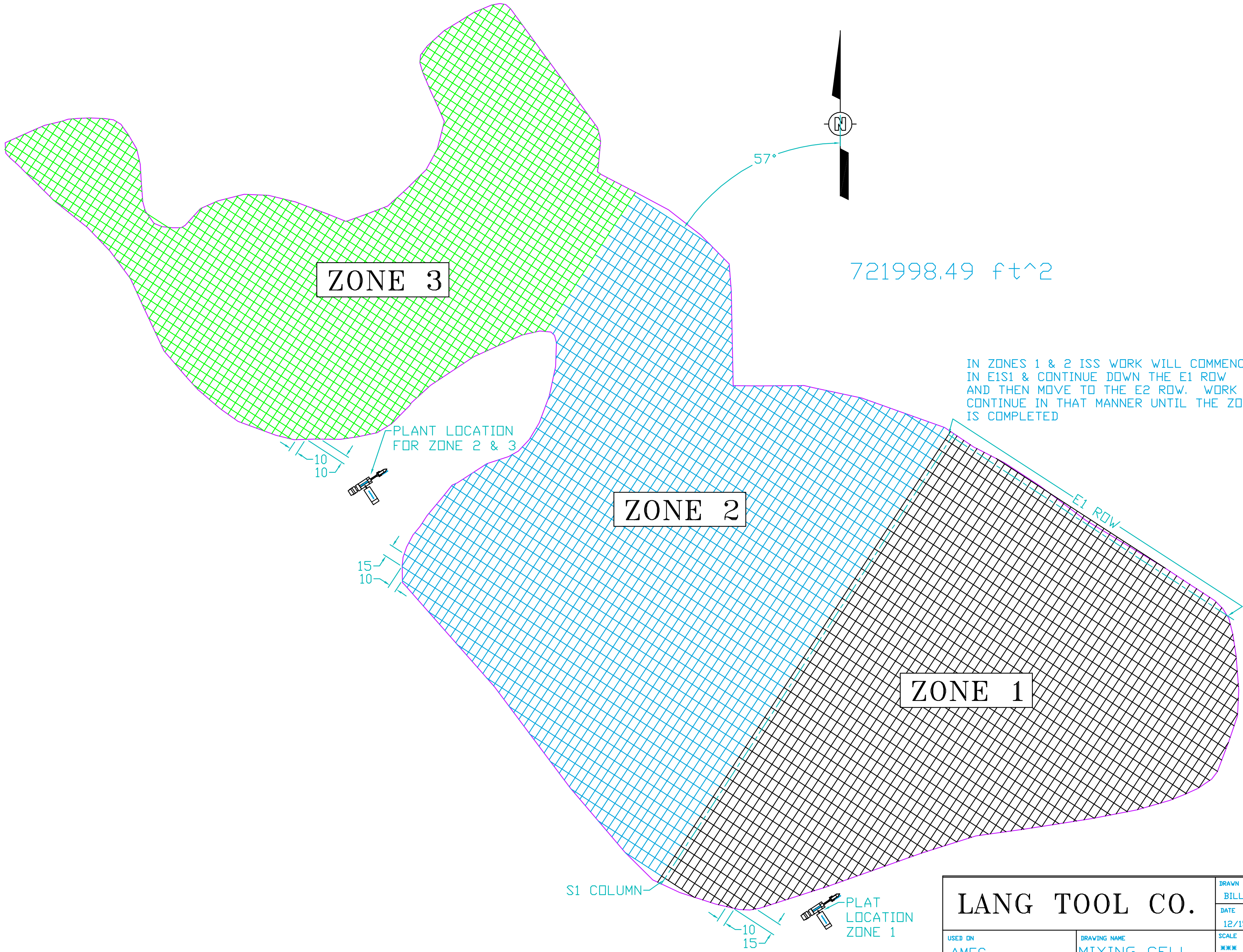
List Source: TestAmerica Savannah

List Creation: 12/28/17 10:19 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment D

Lang Tool Company Excavation Cells and
Dual Axis Blender

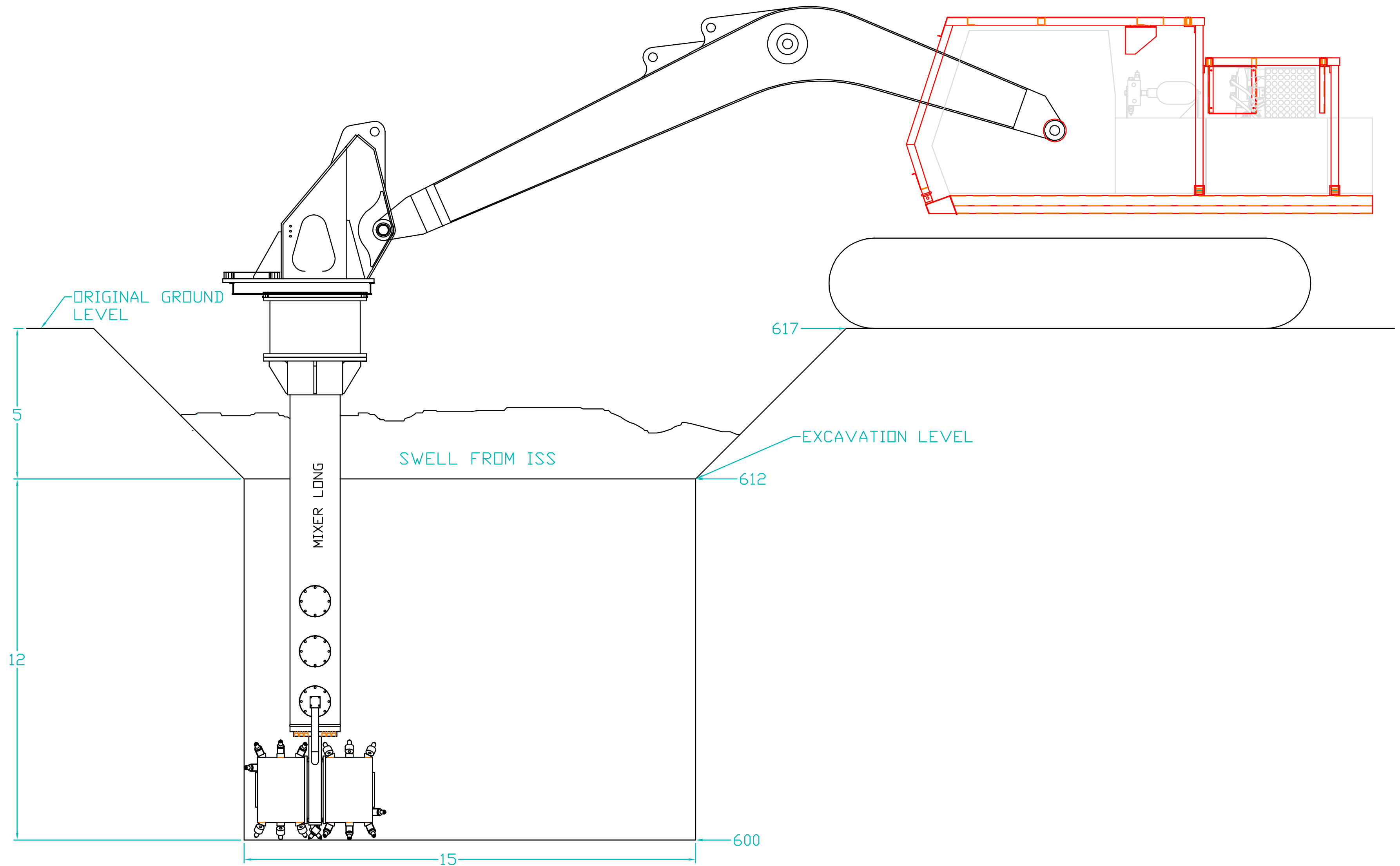


ZONE 3

ZONE 2

ZONE 1

LANG TOOL CO.		DRAWN BY	BILL LANG
		DATE	12/15/2017
USED ON	DRAWING NAME	SCALE	DRAWING NO.
AMEC BAILLY STATION	MIXING CELL LAYOUT	***	BS-001



LANG TOOL CO.		DRAWN BY BILL LANG
		DATE 12/15/2017
USED ON AMEC BAILLY STATION	DRAWING NAME MIXING & EXCAVATION GEOMETRY	SCALE ***
		DRAWING NO. BS-002