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Memo

To: Michelle Kaysen / USEPA
From: Russ Johnson, Tim Glover
cc: Dan Sullivan / NIPSCO
Date: November 16, 2018
Subject: SWMU 15 Treatability Study
NIPSCO Bailly Generating Station

INTRODUCTION

Beginning in 2005, a Resource Conservation and Recovery Act (RCRA) Facility Investigation was implemented at the Bailly Generating Station, located at 246 Bailly Station Road in Chesterton, IN. The RCRA investigation identified three areas A, B and C. Area C includes Solid Waste Management Unit (SWMU) 15 (**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). The revised report kept 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 memo 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 memo 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.

P:\old_WFD-FS1_Data\Projects\NiSource\BaillyGeneratingStation\Deliverables\CMS - Area C\SWMU15_ISS\2017_Study\Final_SWMU15_Investigation_Report_text_111618.docx



EPA recommended that NIPSCO perform ISS feasibility evaluations using both the Synthetic Precipitation Leaching Procedure (SPLP) 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.

A Draft Treatability Study Work Plan for SWMU 15 was issued in November 2017 (Amec Foster Wheeler, 2017d), which included collecting samples of unconsolidated CCR from three areas at SWMU 15 (**Figure 1**) for initial testing. In response to EPA comments dated November 9, 2017, a Final Treatability Study Work Plan for SWMU 15 was filed on December 21, 2017. Based on the initial testing, CCR collected from Area 3 was solidified using five mix designs and tested using the monolith leach testing (LEAF Method 1315). Resulting data were used to evaluate the reduction in mass flux on aquifer concentrations. The purpose of this treatability study is to demonstrate that solidification of CCR and testing of the resulting monolithic solid using LEAF methods is a feasible approach to achieving the goal of reducing mass flux of boron, as well as other inorganics, from the CCR at SWMU 15. It is anticipated that further refinement of mix designs for CCR treatment may be conducted by the remedial contractor, potentially including other amendments.

FINDINGS

Results of CCR and ISS treatability results were reviewed with EPA during conference calls in February, May, and July 2018. Those findings are summarized below.

Unsolidified CCR Treatability Results

The overall objective of implementing ISS is to reduce the mass flux of inorganics, particularly boron, from CCR below the water table at SWMU 15. Therefore, it was necessary to first characterize the leachability of unconsolidated CCR and from that information, choose a representative sample for the solidification study. Direct-push borings were advanced within the footprint of SWMU 15 to collect composite samples of saturated CCR in three areas. Approximately 5 gallons of CCR was required for the proposed testing for both phases of the study - unconsolidated and solidified. To achieve this volume, three direct-push borings were advanced in each area (SB-77 through SB-85; **Figure 1**). Boring logs are included as **Attachment A**. Samples were analyzed for leaching characteristics using EPA Method 1316; compositional analysis of the solid matrix using EPA Method 6010C for Al, As, Ba, B, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Mo, K, Se, Ag, Silica (SiO₂), Na, Sr, Ti, and Zn; EPA Method 7471B for Hg; EPA Method 4500 for P; EPA Method 9038 for total S; and Total Organic Carbon (Lloyd_Kahn); and Moisture Content (ASTM D2216), Bulk Density (ASTM D7263), Solid Specific Gravity (ASTM D854), Organic Content (ASTM D2974), Particle Size with Hydrometer (ASTM D422), Soil Classification (ASTM D2487), and Atterberg Limits (ASTM D4318). Laboratory Reports are included as **Attachment B**.

Preliminary results from the testing of unconsolidified CCR were presented to EPA in a conference call on February 2, 2018 (**Attachment C**). The six COPECs identified in the Revised Draft CMS Report, dated March 18, 2016, include Al, As, B, Mn, Mo and Se. Of these six, the B plume extends the greatest distance and at the highest concentrations into the INDL from SWMU 15.

To assess similarities between the unconsolidified CCR from the three areas, Fingerprint Analysis of Leachate Contaminants (FALCON; USEPA, 2004) plots were developed using the Method 1316 results (**Table 1**) and are presented in Slides 15, 16 and 17 of **Attachment C**. Similar plots were developed for the CCR compositional analysis (**Table 2**; Slides 21, 22 and 23) and add-on testing using the Toxic Characteristic Leaching Procedure (TCLP) for the RCRA 8 metals plus boron (Slide 25). The TCLP testing was not in the original work plan, but later added as part of the constructability evaluation for CCR disposal considerations. The FALCON plots referenced above produced r^2 values ranging from 0.77 to 0.98 (Slide 26), indicating very similar chemical characteristics for the CCR collected from the three areas. The CCR physical properties were also similar between the three areas (Slides 27 and 28).

Based on the parameters summarized above, the CCR from Area 3 was selected for solidification and additional analyses for the following reasons:

- B is most concentrated in groundwater from well MW-119, which is screened in CCR at Area 3.
- The highest B concentrations from the Method 1316 testing are reported for Area 3, although similar to the Area 1 and 2 sample results (i.e., Area 3 is representative of the three areas sampled).
- The highest Al, As, and Mo concentrations from the Method 1316 testing were also reported for Area 3, whereas the Mn concentration at Area 3 is similar to the Area 1 and 2 results.
- The FALCON plots indicate that the leachate characteristics (Methods 1316 and TCLP) are similar in all three samples, as is the CCR solid matrix.
- The physical properties in Area 3 are similar to those in Areas 1 and 2.

Solidified CCR Treatability Results

Formulations - Based on the previous treatability study results (KEMRON, 2015), the addition of 3% Type I Portland Cement (PC) to the CCR significantly reduced the hydraulic conductivity. Therefore, for this study the CCR from Area 3 was mixed with PC at 3% and 6% to provide a baseline for hydraulic conductivity reduction. Other additives (binders) were researched that had the potential to stabilize CCR, and particularly, to potentially provide improved sequestration of B. The CCR from Area 3 was solidified using five mix designs on March 5, 2018, including:

- PC @ 3% (PC3)
- PC @ 6% (PC6)
- PC @ 3% and ferrous sulfate @ 1% (PC3/FS1)
- Calciment @ 3% (CC3)
- PC @ 3%, hydrated lime @ 1.5%, and dolomite @ 1.5% (PC3/HLDM)

Proposed Testing/Performance Criteria - Initially, only the PC3 and PC6 mixes were tested for the physical parameters listed below, with the associated performance criteria.

Parameter	Method	Performance Criterion
Unconfined Compressive Strength (UCS)	ASTM D4832	40-80 psi
Hydraulic Conductivity	ASTM D5084	$1 * 10^{-7}$ cm/sec
Freeze/Thaw	ASTM D4842	Mass Loss <15%
Wetting/Drying	ASTM D4843	Mass Loss <15%
Volumetric Expansion	---	<25%

As detailed in the Work Plan, both the PC3 and PC6 formulations were tested for UCS at 28 and 56 days to determine if an appreciable strength increase was noted (i.e., >25%). Because the UCS threshold was exceeded for both the 3% and 6% formulations, the hydraulic conductivity was tested again for both formulations after 59 days of curing.

In addition to the UCS and hydraulic conductivity characteristics of the solidified CCR, the other key performance criterion recommended by the Interstate Technology and Regulatory Council (ITRC, 2011) is leachability. In accordance with the Work Plan, leach testing was performed on the solidified CCR using two methods. Testing via Method 1315 was specified as the primary approach for assessing overall effectiveness of the stabilization/solidification process. As a secondary assessment, SPLP analysis (EPA Method 1312) was employed to evaluate incremental benefits of stabilization on the chemical fixation of metals.

SPLP testing was performed on separate molds for the five formulations at days 14, 28, 56 and 91. EPA Method 1315 leach testing was performed using a leaching solution that was exchanged with fresh reagent water at nine pre-determined intervals (2 hours, 1 day, 2 days, 7 days, 14 days, 28 days, 42 days, 49 days, and 63 days). Samples collected using Method 1312 and 1315 testing were analyzed at TestAmerica for total metals, including Al, As, B, Mn, Mo, Se, Ca, Fe, Mg, K, and Na using Standard Method 6010C. At the end of each time interval, the Method 1315 eluate (i.e., leachate) was measured at the treatability laboratory for temperature, oxidation reduction potential (ORP), specific conductivity and pH.

Initial Results/Recommendation - A decision point was included in the Work Plan to review the initial eluate data to determine if the FS1, CC3, and HLDM additions to PC3 showed favorable Method 1315 leaching performance compared to the base PC formulations. After the initial 14 days of Method 1315 leach testing, results from the following time intervals were available: 2 hours, 1 day, 2 days, 7 days, and 14 days. At that time results were also available from the Method 1312 testing at curing times of 14 and 28 days. Initial results were presented to EPA in a conference call on May 2, 2018. The Method 1315 results for B showed that all formulations achieved more than a 10-fold reduction in concentration relative to Method 1316. Therefore, the remaining three mixtures were submitted for physical testing.

Final Results - Upon completion of the proposed testing, a third presentation was provided to EPA on July 25, 2018. That presentation included both the initial (May 2) and final (July 25) ISS testing results presented to EPA, and is included as **Attachment D**.

As indicated in Slide 6 of **Attachment D**, the initial results discussed with EPA on May 5, 2018 are highlighted green. As mentioned above, the 59-day hydraulic conductivity testing of the 3% and 6% PC formulations (not highlighted) were conducted because of the USC strength increase discussed above, and the freeze/thaw and wetting/drying tests were in progress. The cells highlighted yellow were proposed for completion; however, there were some tests that could not be completed because of insufficient CCR to create the additional molds. The Slide discussions in the following paragraphs are all referring to **Attachment D**. Tables 3, 4 and 5 provide the physical properties data, the Method 1315 results, and the Method 1312 results, respectively.

Physical Properties - **Table 3** provides the physical properties data as reported by KEMRON. Slide 8 provides a summary of the physical properties of the solidified CCR for which performance standards were developed in the Work Plan. Note that in all cases, the volumetric expansion for all six formulations was below the performance threshold of 25%. For the base formulations of 3% and 6% PC, only the 28-day cure fell within the desired range of 40 to 80 psi for UCS. With additional curing (i.e., 56 days) the UCS for PC3 exceeds the upper bound of 80 psi, and for both time increments, PC6 exceeds the upper limit. The concern regarding excessive UCS is the inability to regrade solidified ash to contour the post-treatment land surface for drainage considerations. The UCS for the PC3/FS1, CC3 and PC3/HLDM fall within, well below, and above the target range, respectively.

The PC6 formulation had the lowest hydraulic conductivity values for Days 28 and 59, and with additional cure time may drop below the performance standard of $1 * 10^{-7}$ cm/sec. Calciment had the highest hydraulic conductivity (and lowest strength). Slide 9 shows the hydraulic conductivity values for the 6 formulations on a log scale in comparison to the unconsolidated CCR as measured in the field at wells MW-119 and MW-125. The PC3 and PC6 formulations reveal a one- to two-order of magnitude decrease in hydraulic conductivity for the PC-solidified CCR compared to the unsolidified CCR.

pH - Slide 12 plots the Method 1315 pH monitoring results. All formulations show an initial increase of approximately 2 pH units, most likely related to the alkaline nature of Portland cement. The pH rise soon flattens out, and in some cases begins to decrease. It is anticipated that pH would continue to return to ambient as the solidified mass weathers.

Method 1315 Results - This mode of testing looks at the combined effects of solidification and sequestration and is a primary consideration in ISS effectiveness. **Table 4** presents the laboratory analytical results for the Method 1315 testing on the solidified CCR, and the four water quality parameters monitored by KEMRON (i.e., pH, ORP, specific conductivity, and temperature). A detailed discussion for the boron results is provided below based on slides from **Attachment D**. Boron is discussed first because it is very mobile by comparison to As, Mn, Mo, Se and Al and has the most developed and concentrated plume in the IDNL. The plumes for Al, As, Mn, Mo and Se do not extend far into the IDNL due to changes in pH and reduction/oxidation potential.

Boron - Slide 13 depicts the Method 1315 eluate concentrations for B on a log-linear plot. Note that for plotting purposes, time intervals on the x-axis are the generalized mean leaching times (see page 16 EPA Method 1315). The initial concentration variability is likely pH driven due to pH-dependent ionic forms of boron, followed by a general rise and plateau as time increases and pH settles above 10.5 (see Slide 12 for pH). At pH 10, B is mainly present in solution as the $B(OH)_4^-$. The Day 63 B concentrations for the five formulations ranged from 0.23 to 0.39 mg/L (**Table 4**). At Day 63, the B concentrations for PC6 (0.36 mg/L) and PC3 (0.32 mg/L) are 6 to 7 times lower than the unconsolidated CCR results (2.3 mg/L) for Method 1316 at a liquid to solid ratio of 10 (**Table 1**).

Slide 20 depicts the interval mass flux (mass flux per leaching interval) for B on a log-log plot for the generalized mean leaching times. Included on Slide 20 is an idealized line having a slope of $-1/2$. This line is based on the analytical solution for mass released assuming simple radial diffusion from a cylinder into an infinite bath (see page 16 Method 1315). Since mass flux is the first derivative of mass release, the slope is negative. The slope of this line represents the "ideal" diffusion flux from a solid cylinder. The position of this line on the graphic is not important; it is included as an ideal for comparing the actual Method 1315 mass flux results for boron to the ideal diffusion prediction. For example, the B results for each formulation do not parallel the idealized slope, indicating that mechanisms other than idealized diffusion are contributing to the B concentrations measured in the eluate. Moreover, the shape of the B mass flux plots suggests that diffusion from the solidified mass is approaching equilibrium with the closed test cell water bath, which deviates from the idealized diffusion assumption of dissolution into an infinite water bath. Slide 19 was taken from Method 1315, which depicts the mass flux for each time interval when saturation occurs for a given time interval. The B mass flux points in Slide 20 resemble the appearance of Slide 19, indicating that diffusion leads to equilibrium for the Method 1315 time intervals plotted.

As shown in Slide 21, for the right hand linear time plot, the B cumulative mass release plot begins to take on an asymptotic curvature. This indicates that less and less B is diffusing through the outer surface of the solidified mass into the water bath for each successive time interval. Included in Slide 21 is the idealized diffusion line with $1/2$ slope (in left hand, log-log plot). As shown in the plot, the B mass flux plot does not parallel the idealized slope for diffusion into an infinite water bath, indicating other mechanisms are contributing B mass into the test water bath.

Arsenic - As indicated in Slide 14, there is more variability in the Method 1315 eluate concentrations for the five formulations compared to the B results for Method 1315. The Day 63 concentrations of As for the five formulations ranged from 0.010J (estimated) to 0.072 mg/L (**Table 4**), substantially lower than the Method 1315 concentrations of B. The PC3 (0.012 mg/L) and PC3/HLDM (0.010J mg/L) formulations exhibited more than a 10-fold reduction in the As concentrations for the solidified mass compared to the Method 1316 (i.e., unconsolidated CCR) result of 0.21 mg/L (**Table 1**), whereas the PC6 result (0.031 mg/L) for Method 1315 revealed an approximate 7-fold decrease compared to the

unsolidified CCR result (Method 1316). The interval mass flux plot for As (Slide 22) more closely mimics the idealized diffusion line than does B. Still, there is evidence that equilibrium is achieved for some of the time intervals (compare the late time mass flux points to Slide 19).

Manganese - there were only two, estimated detections of Mn (0.00072J and 0.0034 mg/L) in the 49 Method 1315 results. The remaining 47 results were non-detect below the reporting limit of 0.003 mg/L. Further evaluation is not possible for this low frequency of detection (FOD).

Molybdenum - As indicated in Slide 16, the Mo concentrations peaked about halfway through the Method 1315 testing and then began to decline. By Day 63, the Mo concentrations for the five formulations ranged from 0.13 to 0.57 mg/L (**Table 4**), similar in magnitude to B. With the exception of PC3, the remaining formulations exhibited more than a 10-fold reduction in the Mo concentrations for the solidified mass compared to the Method 1316 (i.e., unsolidified CCR) results of 4.9 mg/L (**Table 1**). The interval mass flux plot for Mo (Slide 24) very closely mimics the idealized diffusion line. Only a few formulations show evidence of equilibrium for the late time intervals.

Selenium - As indicated in **Table 4**, the Method 1315 results for Se were either non-detect (U-qualified) or estimated (J-qualified) below the reporting limit of 0.025 mg/L. There are too few detections to conduct a meaningful evaluation for the Method 1315 Se results.

Aluminum - Al is discussed last because the solidifying agent common to all five formulations is Portland Cement, which consists of compounds of lime (calcium oxide, CaO) mixed with silica (silicon dioxide, SiO₂) and alumina (aluminum oxide, Al₂O₃). Cement is also caustic (high pH) which enhances the solubility of Al. As indicated in Slide 18, the Al concentrations rose sharply, and then leveled off, with slight declines for some formulations. By Day 63, the Al concentrations for the five formulations ranged from 0.8 to 3.2 mg/L (**Table 4**). The interval mass flux plot for Al (Slide 26) closely mimics the idealized diffusion line. Still, there is evidence that equilibrium is achieved for many of the time intervals (compare the late time mass flux points to Slide 19). As shown in Slide 27, the Al cumulative mass release plot begins to take on an asymptotic curvature. This indicates that less and less Al is diffusing through the outer surface of the solidified mass into the water bath for each successive time interval.

Method 1312 Results - this mode of laboratory testing was designed to focus on the chemical fixation (sequestration) aspect of ISS, as a secondary consideration for this technology. The solidified CCR molds were crushed to expose fresh, unweathered surfaces and then tested as a granular material using the SPLP and the results are summarized in **Table 5**. Slides 28 through 33 of **Attachment D** depict the SPLP results for B, As, Mn, Mo, Se and Al for the five formulations, and compares those results to the Method 1316 results for the unsolidified CCR. A hollow bar is also included in each slide to depict a 25% improvement in sequestration (i.e., 25% lower leachate concentration) compared to the PC6 result for each time interval. Manganese was not detected in

any of the SPLP leachate samples and is not discussed further. A summary of the remaining SPLP results is discussed below.

Boron - PC6 performed consistently well; however, the PC3/HLDM performed 25% better than PC6 for all four test durations. The SPLP leachate concentrations for all formulations fell below the unconsolidated CCR result for Method 1316 (orange bar).

Arsenic - PC6 performed consistently well at all time intervals, and none of the other formulations performed 25% better than PC6 at Day 91. The SPLP leachate concentrations for all formulations fell below the unconsolidated CCR result for Method 1316.

Molybdenum - PC6 performed roughly equal to the other formulations; however, PC3/FS1 performed at least 25% better than PC6 at Days 28 and 91, whereas CC3 performed more than 25% better at Day 56. The SPLP leachate concentrations for all formulations fell below the unconsolidated CCR result for Method 1316.

Selenium - PC3/FS1 performed 25% better than PC6 for 3 of the 4 test durations. For all formulations the selenium SPLP results more closely approach the pre-solidification result using Method 1316 than do B, As, or Mo. This observation suggests that Se more readily dissolves from the crushed surfaces created during the SPLP Method 1312.

Aluminum - PC3/FS1 performed 25% better than PC6 for 3 of the 4 test durations, and PC3/HLDM performed 25% better than PC6 for 2 of the 4 test durations. CC3 also outperformed PC6 on Day 56. All formulations had SPLP concentrations above the unconsolidated CCR results from Method 1316. This increase in concentration reflects the addition of alumina in the Portland Cement.

CONCLUSIONS

PC6 generally performed well. It had the lowest hydraulic conductivity value and passed the durability tests for wet/dry and freeze/thaw. CC3 had the highest hydraulic conductivity value and lowest UCS. Only PC3/HDLM outperformed PC6 regarding the leaching of B for both Methods 1315 and 1312; however, the increased benefit of using PC3/HDLM instead of the simpler formulation of PC6 does not outweigh the increased handling (and cost) and safety concerns of adding a second reagent to the mix. During the July 25, 2018 presentation, NIPSCO recommended moving forward with the PC6 formulation as input to the MODFLOW/MT3D model.

REFERENCES

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SWMU 15 Borings ISS Treatability Study

Northern Indiana Public
Service Company

Bailey Generating Station
Chesterton, Indiana

Legend

- Soil Boring Location 2017
- Soil Boring Location 2016
- Soil Boring Location 2014
- Test Pit End Location 2009
- Soil Boring Location 2006
- Test Pit End Location 2005
- Monitoring Well Location
- Trail
- Bailey Generating Station Property Line
- Test Pit Location 2009
- Test Pit Location 2005
- Coal Combustion Residual Fill Area

Location of Site



Notes and Sources

FIGURE 1

Aerial Photo: 2005.
Courtesy of LizardTech, Inc.

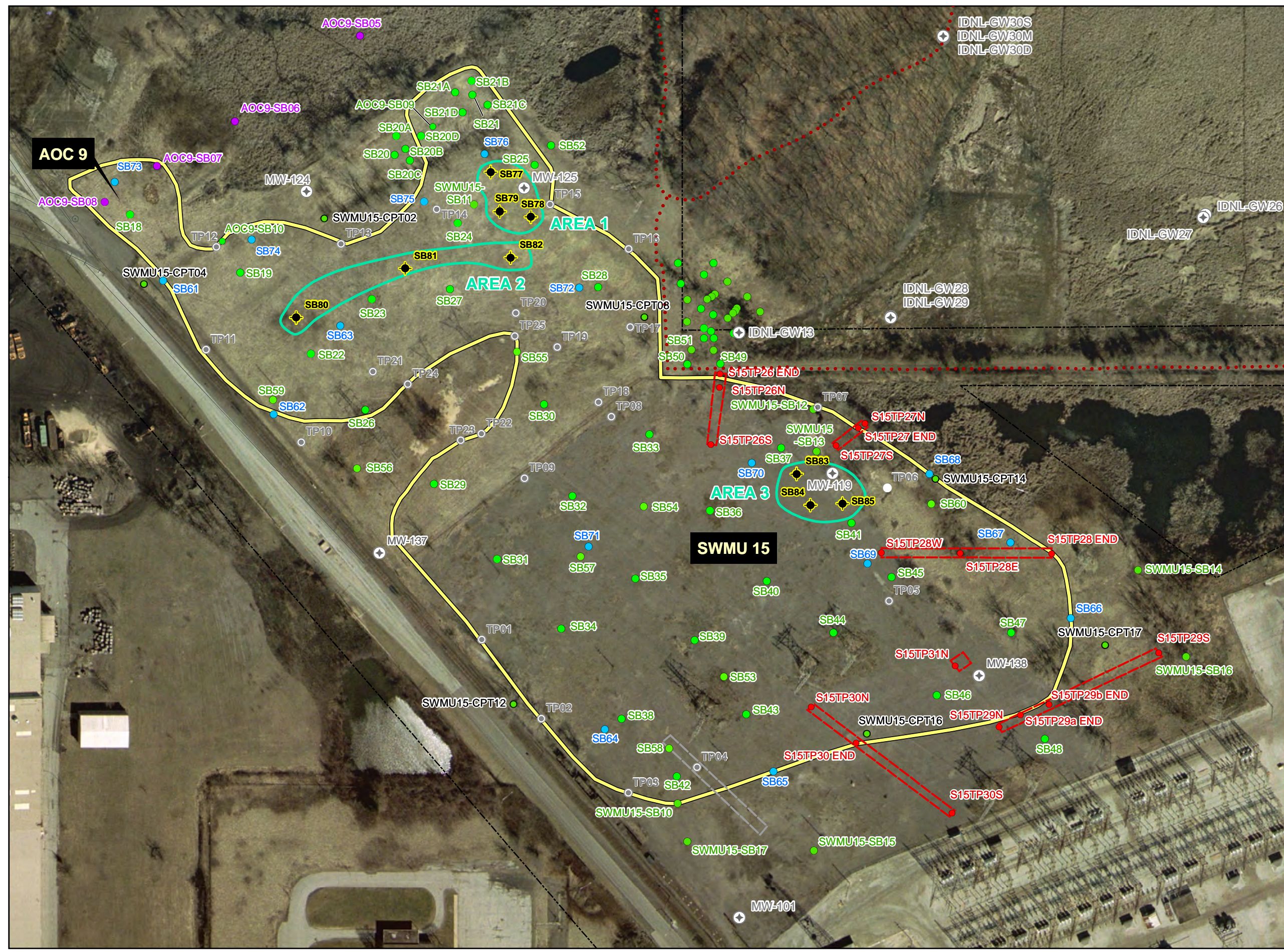
- Area of SWMU 15 landfill is 16.56 acres.

-For abbreviated soil boring locations, the full location name is SWMU15-SB##.



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**Table 1. Method 1316 Results
Bailey Generating Station
RCRA Corrective Action Program
Chesterton, IN**

Parameters	Area 1							Area 2							Area 3						
	T01	T02	T03	T04	T05	RL	MDL	T01	T02	T03	T04	T05	RL	MDL	T01	T02	T03	T04	T05	RL	MDL
Metals (Dissolved)	10	5	2	1	0.5			10	5	2	1	0.5			10	5	2	1	0.5		
Aluminium	0.14	0.11	0.068	0.20 U	0.087	0.20	0.060	0.15	0.077	0.065	0.071	0.11	0.20	0.060	0.3	0.42	0.44	0.66	0.74	0.40	0.12
Arsenic	0.085	0.082	0.072	0.072	0.067	0.015	0.0056	0.089	0.089	0.081	0.088	0.082	0.015	0.0056	0.21	0.21	0.2	0.18	0.16	0.015	0.0056
Boron	2.0	3.0	4.7	5.3	7.5	0.020	0.0040	2.2	3.4	6.1	8.3	11	0.020	0.0040	2.3	3.3	5.7	6.6	6.2	0.040	0.0080
Calcium	12	15	23	30	38	0.50	0.10	20	28	49	72	84	0.50	0.10	41	49	110	170	180	0.50	0.10
Iron	0.04	0.050 U	0.050 U	0.050 U	0.037	0.050	0.019	0.05	0.05	0.05	0.05	0.05	0.050	0.019	0.076	0.053	0.5	0.5	0.5	0.050	0.019
Magnesium	5.1	7.4	12	15	20	0.20	0.043	3.0	4.3	8.1	12	13	0.20	0.043	0.53	0.35	0.84	0.67	0.78	0.40	0.087
Manganese	0.0028	0.0036	0.0062	0.0085	0.013	0.0030	0.00040	0.0031	0.0042	0.0073	0.013	0.016	0.0030	0.00040	0.0025	0.0025	0.0037	0.0027	0.0018	0.0030	0.00040
Molybdenum	0.32	0.48	0.81	1.0	1.4	0.010	0.0036	0.83	1.2	2.2	3.3	4.0	0.010	0.0036	4.9	6.6	21	32.0	34.0	0.020	0.0071
Potassium	4.6	5.7	8.2	9.8	12	0.50	0.10	5.3	7.5	12	16	20	0.50	0.10	15	14	31	41	42	0.50	0.10
Selenium	0.091	0.13	0.22	0.30	0.34	0.025	0.0087	0.070	0.099	0.17	0.26	0.32	0.025	0.0087	0.120	0.17	0.23	0.26	0.3	0.025	0.0087
Sodium	1.7	2.3	3.3	3.8	5.2	1.0	0.32	1.5	2.4	4.0	5.5	6.6	1.0	0.32	2.5	2.1	5.7	7.4	8.3	1.0	0.32
General Chemistry (Dissolved)	T01	T02	T03	T04	T05	RL	MDL	T01	T02	T03	T04	T05	RL	MDL	T01	T02	T03	T04	T05	RL	MDL
Chloride	1.5	1.3	1.9	1.6	2.5	0.50	0.28	0.67	0.56	0.85	1.4	2.5	0.50	0.28	6.1	0.76	2.2	3.3	2.8	0.50	0.28
Sulfate	22	32	55	71	100	2.0	0.35	42	61	120	190	230	2.0	0.35	35	39	130	170	130	2.0	0.35
Organic Carbon	1.7 B	1.8 B	2.2 B	3.0 B	4.4 B	1.0	0.43	2.1	2.5	2.3	3.3	4.2	1.0	0.43	13	11	21	35	53	1.0	0.43
Alkalinity	35	44	57	71	87	5.0	0.79	27	34	41	50	56	5.0	0.79	55	57	61	79	95	5.0	0.79
Total Dissolved Solids	140	150	200	260	320	10	4.0	130	210	270	460	500	10	4.0	970	320	680	290	1100	10	4.0

Notes:

B = Rinsate blank contamination.
U = Non-detect at the reporting limit shown.
Results in milligrams per liter (mg/L).
(T01,T02)(T03)(T04,T05) all have different RL/MDLs.
RL/MDLs included are for T01&T02.

Prepared by: RD 1/24/2018
Checked by: SO 1/24/2018

**Table 2. CCR Composition
Bailey Generating Station
RCRA Corrective Action Program
Chesterton, IN**

Area:			Area 1	Area 2	Area 3
Sample ID:			COMP SB777879	COMP SB808182	COMP SB838485
Sample Date:			12/6/2017	12/6/2017	12/6/2017
Method	Analyte	Units	Result Q	Result Q	Result Q
SW9045D	TEMPERATURE	deg c	19.3	19.3	19.4
SW6010	ALUMINUM	mg/kg	14000	11000	7000
SW6010	ARSENIC	mg/kg	110	220	92
SW6010	BARIUM	mg/kg	190	99	76
SW6010	BORON	mg/kg	140	210	110
SW6010	CADMIUM	mg/kg	3.8	4.1	3.9
SW6010	CALCIUM METAL	mg/kg	31000	4500	8600
SW6010	CHROMIUM	mg/kg	58	83	54
SW6010	COPPER	mg/kg	39	53	41
SW6010	IRON	mg/kg	38000	38000	30000
SW6010	LEAD	mg/kg	49	130	44
SW6010	MAGNESIUM	mg/kg	13000	1500	1700
SW6010	MANGANESE	mg/kg	1100	70	110
SW7471B	MERCURY	mg/kg	0.12 U	0.13 U	0.14 U
SW6010	MOLYBDENUM	mg/kg	40	31	73
SM4500-P E	PHOSPHORUS	mg/kg	360 B	580 B	370 B
SW6010	POTASSIUM	mg/kg	2100	2000	1200
SW6010	SELENIUM	mg/kg	7.5	5.6	6.1
SW6010	SILICA	mg/kg	940	2200	2300
SW6010	SILVER	mg/kg	1.2 U	0.98 U	1.1 U
SW6010	SODIUM	mg/kg	470 J	380 J	180 J
SW6010	STRONTIUM	mg/kg	87	66	40
ASTM D516-90	SULFATE (AS SO4)	mg/kg	49 J	57 J	120
SW9034	SULFIDE	mg/kg	9.9 U	9.9 U	9.9 U
SW6010	TITANIUM METAL POWDER	mg/kg	570	680	450
TOC	TOTAL ORGANIC CARBON	mg/kg	14000 H	18000 H	9100 H
SW9038	TOTAL SULFUR	mg/kg	350	380	190 U
SW6010	ZINC	mg/kg	300	430	250
SW6010	ARSENIC	mg/l	0.052	0.16	0.15
SW6010	BARIUM	mg/l	1.6	0.87 J	1
SW6010	BORON	mg/l	1.5	1.9	1.3
SW6010	CADMIUM	mg/l	0.031	0.016	0.023
SW6010	CHROMIUM	mg/l	0.02 U	0.011 J	0.02 U
SW6010	LEAD	mg/l	0.0091 J	0.015 J	0.016 J
SW6010	SELENIUM	mg/l	0.0097 J	0.025 U	0.0097 J
SW6010	SILVER	mg/l	0.006 U	0.006 U	0.006 U
SW7470	MERCURY	mg/l	0.0002 U	0.0002 U	0.0002 U
SW9045D	pH	pH units	8.5	8.3	9.3

Notes:

- B = Rinsate blank contamination.
- H = Sample was prepped or analyzed beyond the specified holding time.
- J = Estimated result.
- U = Non-detect at reporting limit shown.

Prepared By: AKN 4/3/2018
Checked By: SAM 4/4/2018

**Table 3. Solidification/Stabilization Evaluations
Bailey Generating Station
RCRA Corrective Action Program
Chesterton, IN**

Sample ID	Untreated Material Type	Reagent Type and Identification Number(s)	Reagent Addition % by Wet Soil wt.	Water ⁽¹⁾ Addition % by Reagent wt.	Cure Day	Volumetric Expansion (%)	Unconfined Compressive Strength ASTM D2166				Hydraulic Conductivity ASTM D5084				
							Moisture Content (%)	Bulk Density (lb/ft ³)	Dry Density (lb/ft ³)	UCS (lb/in ²)	Moisture Content (%)	Bulk Density (lb/ft ³)	Dry Density (lb/ft ³)	K (cm/sec)	
PHYS-PC3-28D	Area #3	Type I/II Portland Cement	3.0	100.0	28	12.49	26.74	123.6	97.5	69.0	26.39	120.2	95.1	4.3 x 10 ⁻⁷	
PHYS-PC3-56D					56		24.28	124.4	107.2	107.2					
PHYS-PC3-59D					59	11.80					25.20	126.4	101.0	2.4 x 10 ⁻⁷	
PHYS-PC6-28D	Area #3	Type I/II Portland Cement	6.0	100.0	28	20.83	26.36	121.9	96.4	119.0	27.83	120.4	94.2	2.9 x 10 ⁻⁷	
PHYS-PC6-56D					56		27.08	121.1	229.5	229.5					
PHYS-PC6-59D					59	21.45					27.18	122.5	96.3	1.8 x 10 ⁻⁷	
PHYS-PC3FS1-56D	Area #3	Type I/II Portland Cement/Ferrous Sulfate	3.0/1.0	100.0	59	9.93	27.13	123.9	97.5	61.3	27.57	125.8	98.6	8.5 x 10 ⁻⁷	
PHYS-CC3-56D	Area #3	Hi-Cal Calciment	3.0	100.0	59	9.25	24.81	128.1	102.6	11.7	26.97	124.8	98.3	1.6 x 10 ⁻⁶	
PHYS-PC3HLDLM-56D	Area #3	Type I/II PC/High Cal Hydrated Lime/Ag-Dolomite	3.0/1.5/1.5	100.0	59	17.89	28.54	120.5	93.8	83.6	28.45	121.5	94.6	5.9 x 10 ⁻⁷	

Source: KEMRON Table 3 received via e-mail on May 22, 2018. KEMRON Project No. SH0669.

Notes:

% = Percent

lb/ft³ = pounds per cubic foot

lb/in² = pounds per square inch

Wt= Weight

**Table 5. Method 1312 Results
Bailly Generating Station
RCRA Corrective Action Program
Chesterton, IN**

Client Sample ID	Reagent and Reagent Addition %	Sampling Interval	ALUMINUM (mg/l)	ARSENIC (mg/l)	BORON (mg/l)	MANGANESE (mg/l)	MOLYBDENUM (mg/l)	SELENIUM (mg/l)	CALCIUM (mg/l)	IRON (mg/l)	MAGNESIUM (mg/l)	POTASSIUM (mg/l)	SODIUM (mg/l)	TOTAL ORGANIC CARBON (mg/kg)
1312-PC3-14D	Type I/II PC 3%	14 days	3.7	0.017	0.19 J	0.01 U	1.3	0.073	120	0.1 U	0.5 U	13	3.2 U	7.8
1312-PC3-28D	Type I/II PC 3%	28 days	4	0.012 J	0.2 J	0.01 U	1.3	0.064	110	0.1 U	0.5 U	12	3.6 U	
1312-PC3-56D	Type I/II PC 3%	56 days	4.3 U	0.016	0.34 J	0.01 U	1.2	0.069	74	0.1 U	0.5 U	13	3.5 U	
1312-PC3-91D	Type I/II PC 3%	91 days	4.5	0.033	0.62	0.01 U	1.2	0.057	54	0.1 U	0.5 U	18	4.3 U	
1312-PC6-14D	Type I/II PC 6%	14 days	2.1	0.0085 J	0.11 J	0.01 U	1.1	0.034	210	0.1 U	0.5 U	24	4.7 U	6.8
1312-PC6-28D	Type I/II PC 6%	28 days	3.5	0.015 U	0.17 J	0.01 U	1.3	0.035	130	0.1 U	0.5 U	20	5 U	
1312-PC6-56D	Type I/II PC 6%	56 days	5 U	0.011 J	0.31 J	0.01 U	1.2	0.052	92	0.1 U	0.5 U	32	6 U	
1312-PC6-91D	Type I/II PC 6%	91 days	6.5	0.017	0.47 J	0.01 U	1.2	0.047	68	0.1 U	0.5 U	41	7.4	
1312-PC3FS1-14D	Type I/II PC 3% and FS 1%	14 days	0.6	0.014 J	0.15 J	0.01 U	0.96	0.025 U	120	0.1 U	0.5 U	16	3.7 U	4.3
1312-PC3FS1-28D	Type I/II PC 3% and FS 1%	28 days	0.7	0.013 J	0.15 J	0.01 U	0.93	0.012 J	85	0.1 U	0.5 U	16	4.6 U	
1312-PC3FS1-56D	Type I/II PC 3% and FS 1%	56 days	6 U	0.031	0.37 J	0.01 U	1.1	0.07	58	0.1 U	0.5 U	8.5	3.8 U	
1312-PC3FS1-91D	Type I/II PC 3% and FS 1%	91 days	1.5	0.031	0.35 J	0.01 U	0.63	0.031	47	0.1 U	0.5 U	13	3.5 U	
1312-CC3-14D	Calciment 3%	14 days	6.1	0.026	0.27 J	0.01 U	1.3	0.083	83	0.1 U	0.5 U	8.3	3.5 U	7.4
1312-CC3-28D	Calciment 3%	28 days	6.2	0.023	0.28 J	0.01 U	1.2	0.077	71	0.1 U	0.5 U	7.7	4.9 U	
1312-CC3-56D	Calciment 3%	56 days	1.4 U	0.02	0.34 J	0.01 U	0.82	0.047	63	0.1 U	0.5 U	24	3.8 U	
1312-CC3-91D	Calciment 3%	91 days	5.8	0.038	0.54	0.01 U	1.2	0.075	55	0.1 U	0.5 U	8.5	4.3 U	
1312-PC3HLDM-14D	Type I/II PC 3%, HL 1.5%, and Ag-Dolomite 1.5%	14 days	2	0.0078 J	0.5 U	0.01 U	1.1	0.045	240	0.1 U	0.5 U	14	6.6 U	11
1312-PC3HLDM-28D	Type I/II PC 3%, HL 1.5%, and Ag-Dolomite 1.5%	28 days	2.3	0.015 U	0.5 U	0.01 U	1.2	0.043	220	0.1 U	0.5 U	14	8 U	
1312-PC3HLDM-56D	Type I/II PC 3%, HL 1.5%, and Ag-Dolomite 1.5%	56 days	3.2 U	0.0073 J	0.13 J	0.01 U	1.2	0.049	150	0.086 J	0.5 U	16	3.9 U	
1312-PC3HLDM-91D	Type I/II PC 3%, HL 1.5%, and Ag-Dolomite 1.5%	91 days	5.2	0.014 J	0.26 J	0.01 U	1.1	0.053	99	0.1 U	0.5 U	21	5 U	

Notes:

PC = Portland Cement
 FS = Ferrous Sulfate
 HL = Hydrated Lime
 Ag = Agricultural
 J = Estimated detect
 U = Non-detect at the reporting limit shown.
 Results in milligrams per liter (mg/L) or milligrams per kilogram (mg/kg).

Prepared by: AN 10/2/2018
 Checked by: EP 10/3/2018



wood.

Attachment A

Boring Logs





FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-77

PROJECT NAME: **Bailly Generating Station SWMU-15**

DATE BEGUN: **12/06/2017 1040**

PROJECT NUMBER: **377882016**

DATE COMPLETED: **12/06/2017 1100**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **616.5'**

41.637608 NORTH 87.103407 WEST

Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 1.6) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4).	SW	
1.0	615	0-5	54	0.0		☒	(1.6 - 5.0) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, moist, black (10YR 5/1). Wet after 1.8'. No recovery from 2.7' to 5.0'.	CCR	
2.0			0.0						
3.0			NR						
4.0									
5.0							(5.0 - 14.1) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).		
6.0	610	5-10	100	0.0					
7.0				0.0					
8.0				0.0					
9.0				0.0					
10.0				0.0					
11.0	605	10-15	100	0.0					
12.0				0.0					
13.0				0.0					
14.0				0.0					
15.0	600	15-20	60	0.0			(14.1 - 20.0) SP: Fine to medium SAND, poorly sorted, very dense, wet, grayish brown (7.5YR 5/4).	SP	
16.0				0.0					
17.0				0.0					
18.0				0.0			No Recovery from 18.0' to 20.0'.		
19.0				NR					
20.0							End of boring at 20.0'.		

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-78

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 1107**
 DATE COMPLETED: **12/06/2017 1115**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **617.0'**

41.637416 NORTH 87.103178 WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0						∇	(0.0 - 0.8) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4).	SW	
1.0			0.1						
2.0	615	0-5	76	0.0			(0.8 - 5.0) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, moist, black (10YR 5/1). Wet after 1.6'. No recovery from 3.8' to 5.0'.		CCR
3.0				0.0					
4.0				NR					
5.0				0.0			(5.0 - 19.4) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).		CCR
6.0				0.0					
7.0	610	5-10	100	0.0					
8.0				0.0					
9.0				0.0					
10.0				0.0					
11.0				0.0					
12.0	605	10-15	100	0.0			Layer of coarse CCR from 12.5' to 13.2'.		CCR
13.0				0.0					
14.0				0.0					
15.0				0.0					
16.0				0.0					
17.0	600	15-20	100	0.0					
18.0				0.0					
19.0				0.0			(19.4 - 20.0) SP: Fine to medium SAND, poorly sorted, very dense, wet, grayish brown (7.5YR 5/4). End of boring at 20.0'.	SP	
20.0				0.0					

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-79

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 1120**
 DATE COMPLETED: **12/06/2017 1145**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **616.5'**

41.637440 NORTH 87.103357 WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0						☒	(0.0 - 1.4) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4). Wet after 1.1'.	SW	
1.0	615	0-5	40	0.0			(1.4 - 5.0) CCR: Fine CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1). No recovery from 2.0' to 5.0'.		
2.0				NR					
3.0									
4.0									
5.0									
6.0	610	5-10	94	0.0			(5.0 - 10.0) CCR: Fine CCR, some coarse CCR, soupy wet, not cohesive, black (10YR 5/1).		
7.0				0.0					
8.0				0.0					
9.0				0.0					
10.0				0.0					
11.0	605	10-15	100	0.0			(10.0 - 19.5) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).	CCR	
12.0				0.0					
13.0				0.0					
14.0				NR					
15.0				0.0					
16.0	600	15-20	100	0.0					
17.0				0.0					
18.0				0.0					
19.0				0.0			(19.5 - 20.0) SW: Fine SAND, well sorted, very dense, wet, grayish brown (7.5YR 5/4). End of boring at 20.0'.	SW	
20.0									

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).

☒ = Water level encountered during drilling

* Indicates samples submitted for laboratory analysis

NR - No Recovery



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-80

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 1345**
 DATE COMPLETED: **12/06/2017 1400**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **15.0'**
 GROUND SURFACE ELEVATION: **616.0'**

41.636984 NORTH **87.104517** WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 2.3) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4).	SW	•••••
1.0	615	0-5	68	0.3			Very pale brown (7.5YR 8/3) sand from 0.8' to 1.2'.	SW	•••••
2.0				0.0			(2.3 - 5.0) CCR: Fine CCR, silty texture, shiny flake material throughout, hard and brittle, dry, black (10YR 5/1).	CCR	/ / / / /
3.0				NR			No recovery from 3.4' to 5.0'.	CCR	/ / / / /
4.0							(5.0 - 8.4) CCR: Fine CCR, silty texture, shiny flake material throughout, soft, moist, very dark brown (10YR 2/2).	CCR	/ / / / /
5.0							Wet after 6.4'.	CCR	/ / / / /
6.0	610	5-10	100	0.0		∇	(8.4 - 15.0) SW: Fine SAND, well sorted, loose, wet, brown (7.5YR 5/4).	SW	•••••
7.0				0.0				SW	•••••
8.0				0.0				SW	•••••
9.0				0.0				SW	•••••
10.0				0.0				SW	•••••
11.0	605	10-15	100	0.0			End of boring at 15.0'.	SW	•••••
12.0				0.0				SW	•••••
13.0				0.0				SW	•••••
14.0				0.0				SW	•••••
15.0				0.0				SW	•••••

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-81

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 1305**
 DATE COMPLETED: **12/06/2017 1340**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **25.0'**
 GROUND SURFACE ELEVATION: **617.5'**

41.637195 NORTH 87.103896 WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0				0.0		☒	(0.0 - 1.3) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4).	SW	
1.0				0.0			(1.3 - 23.0) CCR: Fine CCR, silty texture, shiny flake material throughout, soft, moist, black (10YR 5/1). Wet after 1.4'. Layer of coarse CCR from 2.7' to 2.8' and 3.7' to 3.9'. No Recovery from 4.1' to 5.0'.	CCR	
2.0	615	0-5	82	NR					
3.0				0.0					
4.0				0.0					
5.0				0.0					
6.0	610	5-10	100	0.0					
7.0				0.0					
8.0				0.0					
9.0				0.0					
10.0				0.0					
11.0				0.0					
12.0	605	10-15	100	0.0			Trace coarse CCR after 13.5'.		
13.0				0.0					
14.0				0.0					
15.0				0.0					
16.0				0.0					
17.0	600	15-20	96	0.0					
18.0				0.0					
19.0				0.0					
20.0				0.0					
21.0				0.0					
22.0				0.0					
23.0	595	20-25	100	0.0			(23.0 - 24.2) SW: Fine SAND, well sorted, very dense, wet, grayish brown (10YR 5/2).	SW/CL	
24.0				0.0			(24.2 - 25.0) CL: CLAY, trace fine gravel, cohesive, medium plasticity, stiff, wet, gray (2.5Y 5/1). End of Boring at 25.0'.		
25.0									

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-82

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 1235**
 DATE COMPLETED: **12/06/2017 1255**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **617.0'**

41.637242 NORTH **87.103295** WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 0.6) SW: Fine SAND, trace vegetation and roots, well sorted, loose, dry, light brown (7.5YR 6/4).	SW	
1.0				0.0		∇			
2.0	615	0-5	80	0.0			(0.6 - 5.0) CCR: Fine CCR, silty texture, shiny flake material throughout, soft, moist, black (10YR 5/1). Wet after 1.2'. Layer of coarse CCR from 2.6' to 2.8' and 3.7' to 4.0'. No recovery from 4.0' to 5.0'.		
3.0				0.0					
4.0				NR					
5.0									
6.0				0.0			(5.0 - 19.2) CCR: Fine CCR, some coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).		
7.0	610	5-10	100	0.0					
8.0				0.0					
9.0				0.0					
10.0				0.0					
11.0				0.0					
12.0	605	10-15	86	0.0			Soupy wet from 12.3' to 14.3'.		
13.0				0.0					
14.0				NR			No recovery from 14.3' to 15.0'.		
15.0				0.0					
16.0				0.0					
17.0	600	15-20	100	0.0					
18.0				0.0					
19.0				0.0			(19.2 - 20.0) SW: Fine SAND, well sorted, very dense, wet, grayish brown (7.5YR 5/4). End of boring at 20.0'.	SW	
20.0									

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).

∇ = Water level encountered during drilling

* Indicates samples submitted for laboratory analysis

NR - No Recovery



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-83

PROJECT NAME: **Bailly Generating Station SWMU-15**

DATE BEGUN: **12/06/2017 0815**

PROJECT NUMBER: **377882016**

DATE COMPLETED: **12/06/2017 0847**

LOCATION: **Bailly, Indiana**

41.636317 NORTH 87.101660 WEST

DRILLING CO: **Cabeno Environmental**

Amec Foster Wheeler Environment & Infrastructure, Inc.

DRILLING METHOD: **7822DT**

2601 Fortune Circle East, Suite 100A

DRILLER: **Wilbanks, Miles**

Indianapolis, IN 46241

GEOLOGIST: **Miller, Kevin**

TOTAL DEPTH: **20.0'**

GROUND SURFACE ELEVATION: **616.5'**

Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 0.2) Fill: Coarse SLAG, very hard and compact, dry, light reddish brown (5YR 6/3).		●●●●
1.0	615	0-5	100	0.0		∇	(0.2 - 5.4) SW: Fine SAND, some medium sand, well sorted, dense, dry, yellow (10YR 7/6).	SW	●●●●
2.0				0.0					
3.0				0.0					
4.0				0.0			Wet after 2.4'.		
5.0				0.0					
6.0	610	5-10	100	0.0			(5.4 - 18.8) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).	CCR	/ / / /
7.0				0.0					
8.0				0.1					
9.0				0.0					
10.0				0.0					
11.0	605	10-15	100	0.0					
12.0				0.0					
13.0				0.0					
14.0				0.0					
15.0				0.0					
16.0	600	15-20	100	0.0					
17.0				0.0					
18.0				0.0					
19.0				0.0			(18.8 - 20.0) SW: Fine SAND, well sorted, very dense, wet, yellowish brown (10YR 5/6).	SW	●●●●
20.0				0.0			End of boring at 20.0'.		

NOTES: Saturated portion of fine CCR collected for treatability study.
Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-84

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 0855**
 DATE COMPLETED: **12/06/2017 0930**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **617.5'**

41.636183 NORTH 87.101582 WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 0.9) Fill: Coarse SLAG, very hard and compact, dry, light reddish brown (5YR 6/3).	Fill	
1.0			0.0				(0.9 - 3.1) SW: Fine SAND, some medium sand, well sorted, dense, dry, yellow (10YR 7/6). Wet after 2.5'.	SW	
2.0	615	0-5	96	0.1					
3.0							(3.1 - 19.0) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, wet, black (10YR 5/1).	CCR	
4.0			0.0						
5.0				0.0					
6.0							(19.0 - 20.0) SW: Fine SAND, well sorted, very dense, wet, yellowish brown (10YR 5/6). End of boring at 20.0'.	SW	
7.0	610	5-10	92	0.0					
8.0				0.2					
9.0									
10.0			0.0						
11.0				0.0					
12.0	605	10-15	90	0.0					
13.0				0.0					
14.0				0.1					
15.0				0.0					
16.0									
17.0	600	15-20	100	0.0					
18.0				0.1					
19.0									
20.0									

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).



FIELD BOREHOLE LOG

BOREHOLE NUMBER

SB-85

PROJECT NAME: **Bailly Generating Station SWMU-15**
 PROJECT NUMBER: **377882016**

DATE BEGUN: **12/06/2017 0935**
 DATE COMPLETED: **12/06/2017 1010**

LOCATION: **Bailly, Indiana**
 DRILLING CO: **Cabeno Environmental**
 DRILLING METHOD: **7822DT**
 DRILLER: **Wilbanks, Miles**
 GEOLOGIST: **Miller, Kevin**
 TOTAL DEPTH: **20.0'**
 GROUND SURFACE ELEVATION: **617.0'**

41.636190 NORTH 87.101399 WEST
 Amec Foster Wheeler Environment & Infrastructure, Inc.
 2601 Fortune Circle East, Suite 100A
 Indianapolis, IN 46241
 Phone (317) 713-1700

DEPTH (FT)	ELEVATION (FT MSL)	SAMPLE INTERVAL (FT)	SAMPLE RECOVERY (%)	ORGANIC VAPOR (PPM)	SAMPLES *	DEPTH TO WATER	DESCRIPTION	USCS	LITHOLOGY
0.0							(0.0 - 0.6) Fill: Coarse SLAG, very hard and compact, dry, light reddish brown (5YR 6/3).		SW
1.0			0.0						SW
2.0	615	0-5	96			∇	(0.6 - 1.7) SW: Fine SAND, some medium sand, well sorted, dense, dry, yellow (10YR 7/6).		CCR
3.0			0.1						CCR
4.0							(1.7 - 17.8) CCR: Fine CCR, trace coarse CCR, silty texture, shiny flake material throughout, soft, moist, black (10YR 5/1).		CCR
5.0			0.0				Wet after 2.5'.		CCR
6.0									CCR
7.0	610	5-10	98						CCR
8.0			0.0						CCR
9.0			0.2						CCR
10.0									CCR
11.0			0.0						CCR
12.0	605	10-15	80				No recovery from 14.0' to 15.0'.		CCR
13.0			0.0						CCR
14.0									CCR
15.0			0.1						CCR
16.0									CCR
17.0	600	15-20	100				Increase in coarse CCR after 17.0'.		CCR
18.0			0.0						CCR
19.0							(17.8 - 20.0) SW: Fine SAND, well sorted, very dense, wet, yellowish brown (10YR 5/6).		SW
20.0			0.1				End of boring at 20.0'.		SW

NOTES: Saturated portion of fine CCR collected for treatability study.
 Ground surface elevation approximate (based on surveyed contours).

∇ = Water level encountered during drilling

* Indicates samples submitted for laboratory analysis

NR - No Recovery



wood.

Attachment B

Laboratory Reports



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

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results through

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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.

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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

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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

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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

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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

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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	%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	%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	%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	%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	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	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	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	DU Result	DU Qualifier	Unit	D	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	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	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.

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes No

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: **NIPSCO (Ni SOURCE)** Project Manager: **RUSSELL JOHNSON** Date: **12-19-17** Chain of Custody Number: **278861**

Address: **246 BAILLY STATION ROAD** Telephone Number (Area Code)/Fax Number: **978-392-5336** Lab Number: _____ Page **1** of **1**

City: **CHESTERTON** State: **IN** Zip Code: _____ Site Contact: **D. SULLIVAN** Lab Contact: **J. SCHOVE** Analysis (Attach list if more space is needed)

Project Name and Location (State): **BAILLY GENERATING STATION** Carrier/Waybill Number: **8060 3926 5312**

Sample I.D. No. and Description <small>(Containers for each sample may be combined on one line)</small>	Date	Time	Matrix					Containers & Preservatives					SULFATE	REAG. SULFIDE	TELP REGR B + B	PH	Analysis (Attach list if more space is needed)	
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH						
COMP SB717079	12/6/17	1145				X	X				X	X	X	X				2 ea 8oz jars
COMP SB809182	12/6/17	1255				X	X				X	X	X	X				2 ea 8oz. jars
COMP SB 838485	12/6/17	10 ¹⁰				X	X				X	X	X	X				2 ea 8oz. jars
																		B = boron



tions/ receipt

480-129242 COR

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Return To Client Disposal By Lab Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: 24 Hours 48 Hours 7 Days 14 Days 21 Days Other _____ QC Requirements (Specify): **Received by: Chris How TA 12/20/17 1650**

1. Relinquished By KEVIN MILLER (by RCP)	Date 12-8-17	Time ---	1. Received By FEDEX 8086 2703 6143	Date 12-8-17	Time ---
2. Relinquished By FEDEX 8086 2703 6143	Date 12-9-17	Time 11¹⁰	2. Received By Russell G. Johnson (RCP)	Date 12-9-17	Time 11¹⁰
3. Relinquished By Russell G. Johnson	Date 12-19-17	Time 11⁰⁰	3. Received By FEDEX	Date 12-19-17	Time 16⁰⁰

Comments: **Samples refrigerated at AMEC FOSTER WHEELER FROM 12-9-17 to 12-19-17 Temp 23 #1 ICE**

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

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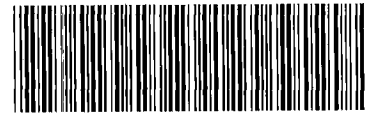
1/9/2018



TestAmerica Buffalo

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

Chain of Custody Record



TestAmerica

LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	480-128745 Chain of Custody
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamerica.com	Job #: 39738.1

Company: TestAmerica Laboratories, Inc.	Accreditations Required (See note):	Page 1 of 1
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403	Due Date Requested: 12/29/2017 TAT Requested (days):	Job #: 480-128745-1

Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:	Analysis Requested	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 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)
Email:	WO #:		
Project Name: Bailey Generating Station	Project #: 48003007	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Lloyd, Kahn/ Routine Lloyd Kahn	Total Number of Containers
Site: Bailey Generating Station	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Lloyd, Kahn/ Routine Lloyd Kahn	Total Number of Containers	Special Instructions/Note:
COMP SB777879 (480-128745-1)	12/6/17	11:45 Eastern		Solid	X				
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern		Solid	X				
COMP SB838485 (480-128745-3)	12/6/17	10:10 Eastern		Solid	X				

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/tests/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	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2
Empty Kit Relinquished by:	Special Instructions/QC Requirements:

Date/Time:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Covatta</i>	Date/Time: 12/19/17 1600	Company: DAB	Received by: <i>V. J. De</i>
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: 099433	Cooler Temperature(s) °C and Other Remarks: 2.4
--	-----------------------------	--

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1/9/2018



ORIGIN ID:DKKA (716) 691-2600
CHAR BRONSON
TEST AMERICA
10 HAZELWOOD

AMHERST, NY 14228
UNITED STATES US

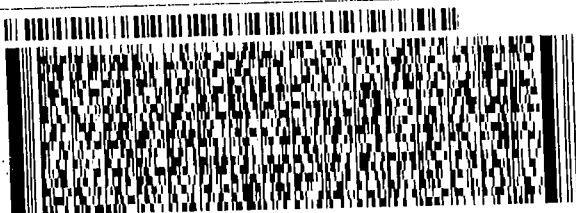
SHIP DATE: 19DEC17
ACTWGT: 11.40 LB
CAD: 846654/CAFE3108
DIMS: 15x13x10 IN

BILL RECIPIENT

TO **SAMPLE MGT.**
TA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1990
DEPT: SAMPLE CONTROL

REF: BURLINGTON



FedEx
Express



WED - 20 DEC 3:00P
STANDARD OVERNIGHT

TRK# 5657 0123 5923
0201

XH BTVA

05403
VT-US BTV

Part # 158148-434 FIT EXP 09/18 *



1.6/1-3

Chain of Custody Record



Client Information (Sub Contract Lab)			Sampler:		Lab PM:		Carrier Tracking No(s):			COC No:										
Client Contact:			Phone:		E-Mail:		State of Origin:			Page:										
Shipping/Receiving					john.schove@testamericainc.com		Indiana			Page 1 of 1										
Company:					Accreditations Required (See note):					Job #:										
TestAmerica Laboratories, Inc.										480-128745-1										
Address:			Due Date Requested:		Analysis Requested							Preservation Codes:								
4101 Shuffel Street NW,			12/29/2017																	
City:			TAT Requested (days):																	
North Canton																				
State, Zip:			PO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers							
OH, 44720			WO #:																	
Phone:			Project #:																	
330-497-9396(Tel) 330-497-0772(Fax)			48003007		BT=Tissue, AnAir		Preservation Code:		Special Instructions/Note:											
Email:			SSOW#:																	
Project Name:			Project #:		Field Filtered Sample (Yes or No)			Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers						
Bailly Generating Station			48003007																	
Site:			SSOW#:		Field Filtered Sample (Yes or No)			Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers						
Bailly Generating Station																				
Sample Identification - Client ID (Lab ID)			Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, AnAir)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
COMP SB777879 (480-128745-1)			12/6/17		11:45 Eastern		Solid				Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
COMP SB808182 (480-128745-2)			12/6/17		12:55 Eastern		Solid				Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
COMP SB838485 (480-128745-3)			12/6/17		10:10 Eastern		Solid				Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	
											Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6010C/3050B CCR Metals List		7471B/7471B_Prep Mercury		Total Number of containers	

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

Unconfirmed Return To Client Disposal By Lab Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by: [Signature] Date/Time: 12/27/17 1600 Company: TOB Received by: [Signature] Date/Time: 12/28/17 1000 Company: TA

Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

Custody Seals Intact: Yes No Custody Seal 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 NA

-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 No NA  ← Larger than this.

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): _____

TestAmerica Buffalo

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

Chain of Custody Record



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)			Sampler: _____		Lab PM: Schove, John R		Carrier Tracking No(s): _____		COC No: 480-39741.1			
Client Contact: _____ Shipping/Receiving _____			Phone: _____		E-Mail: john.schove@testamericainc.com		State of Origin: Indiana		Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): _____				Job #: 480-128745-1				
Address: 5102 LaRoche Avenue, City: Savannah State, Zip: GA, 31404 Phone: 912-354-7858(Tel) 912-352-0165(Fax) Email: _____			Due Date Requested: 12/29/2017		Analysis Requested						<p>Preservation Codes:</p> <p>A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 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)</p> <p>Other: _____</p>	
TAT Requested (days): _____		Project #: 48003007										
Project Name: Bailly Generating Station		SSOW#:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		9038_Total_S/5050 Sulfur, Total		Total Number of containers		
Site: Bailly Generating Station			Project #: 48003007		SSOW#:							
Sample Identification - Client ID (Lab ID)			Sample Date		Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=Tissue, A=Air)					
					Preservation Code:							
COMP SB777879 (480-128745-1)			12/6/17		11:45 Eastern	Solid				1		
COMP SB808182 (480-128745-2)			12/6/17		12:55 Eastern	Solid				1		
COMP SB838485 (480-128745-3)			12/6/17		10:10 Eastern	Solid				1		

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Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements: _____					
Empty Kit Relinquished by: _____			Date: _____		Time: _____		Method of Shipment: _____			
Relinquished by: <i>EW</i>		Date/Time: <i>12/27/17 1600</i>		Company: <i>TAB</i>		Received by: <i>AD</i>		Date/Time: <i>12/28 930</i>		Company: <i>TASA 11</i>
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: <i>2.1</i> <i>2.5</i>					

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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	

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: 480-130057-1

Client Project/Site: Bailly Generating Station

Revision: 1

For:

AMEC Foster Wheeler E & I, Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

4/17/2018 3:24:08 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

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

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Sample Summary

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

TestAmerica Job ID: 480-130057-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-130057-1	1316-Area1-LSR10	Water	01/11/18 09:45	01/12/18 15:05
480-130057-2	1316-Area1-LSR05	Water	01/11/18 09:51	01/12/18 15:05
480-130057-3	1316-Area1-LSR02	Water	01/11/18 09:55	01/12/18 15:05
480-130057-4	1316-Area1-LSR01	Water	01/11/18 09:59	01/12/18 15:05
480-130057-5	1316-Area1-LSR0.5	Water	01/11/18 10:03	01/12/18 15:05
480-130057-6	1316-Area1-BLANK	Water	01/11/18 10:07	01/12/18 15:05
480-130057-7	1316-Area2-LSR10	Water	01/11/18 10:10	01/12/18 15:05
480-130057-8	1316-Area2-LSR05	Water	01/11/18 10:15	01/12/18 15:05
480-130057-9	1316-Area2-LSR02	Water	01/11/18 10:19	01/12/18 15:05
480-130057-10	1316-Area2-LSR01	Water	01/11/18 10:22	01/12/18 15:05
480-130057-11	1316-Area2-LSR0.5	Water	01/11/18 10:26	01/12/18 15:05
480-130057-12	1316-Area2-BLANK	Water	01/11/18 10:29	01/12/18 15:05
480-130057-13	1316-Area3-LSR10	Water	01/11/18 10:32	01/12/18 15:05
480-130057-14	1316-Area3-LSR05	Water	01/11/18 10:36	01/12/18 15:05
480-130057-15	1316-Area3-LSR02	Water	01/11/18 10:40	01/12/18 15:05
480-130057-16	1316-Area3-LSR01	Water	01/11/18 10:42	01/12/18 15:05
480-130057-17	1316-Area3-LSR0.5	Water	01/11/18 10:45	01/12/18 15:05
480-130057-18	1316-Area3-BLANK	Water	01/11/18 10:48	01/12/18 15:05

Method Summary

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

TestAmerica Job ID: 480-130057-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF

Protocol References:

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



Definitions/Glossary

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

TestAmerica Job ID: 480-130057-1

Qualifiers

Metals

Qualifier	Qualifier Description
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
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: 480-130057-1

Job ID: 480-130057-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-130057-1

Revision

This report has been revised to change all the client ID's requested on 4/16/2018.

Receipt

The samples were received on 1/12/2018 3:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 1.4° C.

HPLC/IC

Method(s) 9056A: The following samples were diluted to bring the concentration of target analytes within the calibration range: 1316-Area1-LSR0.5 (480-130057-5), 1316-Area2-LSR02 (480-130057-9), 1316-Area2-LSR01 (480-130057-10) and 1316-Area2-LSR0.5 (480-130057-11). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The following samples were diluted to bring the concentration of target analytes within the calibration range: 1316-Area3-LSR02 (480-130057-15), 1316-Area3-LSR01 (480-130057-16) and 1316-Area3-LSR0.5 (480-130057-17). Elevated reporting limits (RLs) are provided.

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

Metals

Method(s) 6010C: The following samples were diluted due to the presence of Dissolved Molybdenum which interferes with Aluminum, Boron, and Magnesium: 1316-Area3-LSR10 (480-130057-13), 1316-Area3-LSR05 (480-130057-14), 1316-Area3-LSR02 (480-130057-15), 1316-Area3-LSR01 (480-130057-16) and 1316-Area3-LSR0.5 (480-130057-17). Elevated reporting limits (RLs) are provided.

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

General Chemistry

Method(s) SM 2320B: The following sample(s) was received with headspace in the sample container. This sample container was received with headspace: 1316-Area1-LSR10 (480-130057-1), 1316-Area1-LSR05 (480-130057-2), 1316-Area1-LSR0.5 (480-130057-5), 1316-Area1-BLANK (480-130057-6), 1316-Area2-LSR10 (480-130057-7), 1316-Area2-LSR05 (480-130057-8), 1316-Area2-LSR02 (480-130057-9), 1316-Area2-LSR01 (480-130057-10), 1316-Area2-LSR0.5 (480-130057-11), 1316-Area2-BLANK (480-130057-12), 1316-Area3-LSR10 (480-130057-13), 1316-Area3-LSR05 (480-130057-14), 1316-Area3-LSR02 (480-130057-15), 1316-Area3-LSR01 (480-130057-16), 1316-Area3-LSR0.5 (480-130057-17) and 1316-Area3-BLANK (480-130057-18).

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

Detection Summary

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-LSR10

Lab Sample ID: 480-130057-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.14	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.085		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	2.0		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	12		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.040	J	0.050	0.019	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	5.1		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0028	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.32		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	4.6		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.091		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.7		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.5		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	22		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	1.7	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	35		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	140		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area1-LSR05

Lab Sample ID: 480-130057-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.082		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	3.0		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	15		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	7.4		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0036		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.48		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	5.7		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.13		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.3		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.3		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	32		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	44		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	150		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area1-LSR02

Lab Sample ID: 480-130057-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.068	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	4.7		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	23		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	12		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0062		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.81		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	8.2		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.22		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.3		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.9		0.50	0.28	mg/L	1		9056A	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area1-LSR02 (Continued)

Lab Sample ID: 480-130057-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate, Dissolved	55		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.2	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	57		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	200		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area1-LSR01

Lab Sample ID: 480-130057-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	5.3		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	30		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	15		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0085		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	1.0		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.8		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.30		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.8		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.6		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	71		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	3.0	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	71		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	260		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area1-LSR0.5

Lab Sample ID: 480-130057-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.087	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.067		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	7.5		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	38		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.037	J	0.050	0.019	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	20		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.013		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	1.4		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	12		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.34		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	5.2		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	2.5		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	100		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	87		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	320		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area1-BLANK

Lab Sample ID: 480-130057-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron, Dissolved	0.017	J	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	0.15	J	0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.034	J	0.050	0.019	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00051	J	0.0030	0.00040	mg/L	1		6010C	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area1-BLANK (Continued)

Lab Sample ID: 480-130057-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium, Dissolved	0.25	J	0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	0.47	J	1.0	0.32	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	0.67	J B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	2.0	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	5.0	J	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area-2-LSR10

Lab Sample ID: 480-130057-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.15	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.089		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	2.2		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	20		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	3.0		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0031		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.83		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	5.3		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.070		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.5		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.67		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	42		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.1	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	27		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area2-LSR05

Lab Sample ID: 480-130057-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.077	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.089		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	3.4		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	28		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	4.3		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0042		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	1.2		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	7.5		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.099		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.56		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	61		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.5	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	34		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	210		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area2-LSR02

Lab Sample ID: 480-130057-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.065	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.081		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	6.1		0.020	0.0040	mg/L	1		6010C	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area2-LSR02 (Continued)

Lab Sample ID: 480-130057-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium, Dissolved	49		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	8.1		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0073		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	2.2		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	12		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.17		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	4.0		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.85	J	1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	120		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	2.3	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	41		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	270		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area2-LSR01

Lab Sample ID: 480-130057-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.071	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.088		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	8.3		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	72		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	12		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.013		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	3.3		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	16		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.26		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	5.5		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.4		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	190		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	3.3	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	50		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	460		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area2-LSR0.5

Lab Sample ID: 480-130057-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.082		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	11		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	84		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	13		0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.016		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	4.0		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	20		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.32		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	6.6		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	230		10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	4.2	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	56		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	500		10	4.0	mg/L	1		SM 2540C	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area2-BLANK

Lab Sample ID: 480-130057-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron, Dissolved	0.026		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	0.21	J	0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.027	J	0.050	0.019	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0014	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	0.52	J B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	1.4	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	7.0	J	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-LSR10

Lab Sample ID: 480-130057-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.30	J	0.40	0.12	mg/L	2		6010C	Dissolved
Arsenic, Dissolved	0.21		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	2.3		0.040	0.0080	mg/L	2		6010C	Dissolved
Calcium, Dissolved	41		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.076		0.050	0.019	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.53		0.40	0.087	mg/L	2		6010C	Dissolved
Manganese, Dissolved	0.0025	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	4.9		0.020	0.0071	mg/L	2		6010C	Dissolved
Potassium, Dissolved	15		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.12		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.5		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	6.1		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	35		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	13	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	55		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	970		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-LSR05

Lab Sample ID: 480-130057-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.42		0.40	0.12	mg/L	2		6010C	Dissolved
Arsenic, Dissolved	0.21		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	3.3		0.040	0.0080	mg/L	2		6010C	Dissolved
Calcium, Dissolved	49		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.053		0.050	0.019	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.35	J	0.40	0.087	mg/L	2		6010C	Dissolved
Manganese, Dissolved	0.0025	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	6.6		0.020	0.0071	mg/L	2		6010C	Dissolved
Potassium, Dissolved	14		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.17		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.1		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.76		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	39		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	11	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	57		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	320		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-LSR02

Lab Sample ID: 480-130057-15

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: 480-130057-1

Client Sample ID: 1316-Area3-LSR02 (Continued)

Lab Sample ID: 480-130057-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.44	J	1.0	0.30	mg/L	5		6010C	Dissolved
Arsenic, Dissolved	0.20		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	5.7		0.10	0.020	mg/L	5		6010C	Dissolved
Calcium, Dissolved	110		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.84	J	1.0	0.22	mg/L	5		6010C	Dissolved
Manganese, Dissolved	0.0037		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	21		0.050	0.018	mg/L	5		6010C	Dissolved
Potassium, Dissolved	31		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.23		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	5.7		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	2.2		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	130		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	21	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	61		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	680	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-LSR01

Lab Sample ID: 480-130057-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.66	J	2.0	0.60	mg/L	10		6010C	Dissolved
Arsenic, Dissolved	0.18		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	6.6		0.20	0.040	mg/L	10		6010C	Dissolved
Calcium, Dissolved	170		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.67	J	2.0	0.43	mg/L	10		6010C	Dissolved
Manganese, Dissolved	0.0027	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	32		0.10	0.036	mg/L	10		6010C	Dissolved
Potassium, Dissolved	41		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.26		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	7.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	3.3		2.5	1.4	mg/L	5		9056A	Dissolved
Sulfate, Dissolved	170		10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	35	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	79		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	290	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-LSR0.5

Lab Sample ID: 480-130057-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.74	J	2.0	0.60	mg/L	10		6010C	Dissolved
Arsenic, Dissolved	0.16		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	6.2		0.20	0.040	mg/L	10		6010C	Dissolved
Calcium, Dissolved	180		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.78	J	2.0	0.43	mg/L	10		6010C	Dissolved
Manganese, Dissolved	0.0018	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	34		0.10	0.036	mg/L	10		6010C	Dissolved
Potassium, Dissolved	42		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.30		0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	8.3		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	2.8		2.5	1.4	mg/L	5		9056A	Dissolved
Sulfate, Dissolved	130		10	1.7	mg/L	5		9056A	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area3-LSR0.5 (Continued)

Lab Sample ID: 480-130057-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	53	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	95		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	1100	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1316-Area3-BLANK

Lab Sample ID: 480-130057-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.047		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	1.1		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.13		0.050	0.019	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00084	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	0.51		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	0.55	J	1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	0.77	J	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	0.93	J B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	2.6	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	30	B	10	4.0	mg/L	1		SM 2540C	Dissolved

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: 480-130057-1

Client Sample ID: 1316-Area1-LSR10

Lab Sample ID: 480-130057-1

Date Collected: 01/11/18 09:45

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.14	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 21:46	1
Arsenic, Dissolved	0.085		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 21:46	1
Boron, Dissolved	2.0		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 21:46	1
Calcium, Dissolved	12		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:46	1
Iron, Dissolved	0.040	J	0.050	0.019	mg/L		01/16/18 08:52	01/16/18 21:46	1
Magnesium, Dissolved	5.1		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 21:46	1
Manganese, Dissolved	0.0028	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 21:46	1
Molybdenum, Dissolved	0.32		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 21:46	1
Potassium, Dissolved	4.6		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:46	1
Selenium, Dissolved	0.091		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 21:46	1
Sodium, Dissolved	1.7		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 21:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.5		0.50	0.28	mg/L			01/16/18 14:23	1
Sulfate, Dissolved	22		2.0	0.35	mg/L			01/16/18 14:23	1
Dissolved Organic Carbon	1.7	B	1.0	0.43	mg/L			01/16/18 12:08	1
Alkalinity, Dissolved	35		5.0	0.79	mg/L			01/17/18 21:02	1
Total Dissolved Solids	140		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-LSR05

Lab Sample ID: 480-130057-2

Date Collected: 01/11/18 09:51

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 21:49	1
Arsenic, Dissolved	0.082		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 21:49	1
Boron, Dissolved	3.0		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 21:49	1
Calcium, Dissolved	15		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:49	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 21:49	1
Magnesium, Dissolved	7.4		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 21:49	1
Manganese, Dissolved	0.0036		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 21:49	1
Molybdenum, Dissolved	0.48		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 21:49	1
Potassium, Dissolved	5.7		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:49	1
Selenium, Dissolved	0.13		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 21:49	1
Sodium, Dissolved	2.3		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 21:49	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.3		0.50	0.28	mg/L			01/16/18 14:31	1
Sulfate, Dissolved	32		2.0	0.35	mg/L			01/16/18 14:31	1
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L			01/16/18 13:08	1
Alkalinity, Dissolved	44		5.0	0.79	mg/L			01/17/18 21:09	1
Total Dissolved Solids	150		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-LSR02

Lab Sample ID: 480-130057-3

Date Collected: 01/11/18 09:55

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.068	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 21:53	1
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 21:53	1
Boron, Dissolved	4.7		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 21:53	1
Calcium, Dissolved	23		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:53	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 21:53	1
Magnesium, Dissolved	12		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 21:53	1
Manganese, Dissolved	0.0062		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 21:53	1
Molybdenum, Dissolved	0.81		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 21:53	1
Potassium, Dissolved	8.2		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:53	1
Selenium, Dissolved	0.22		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 21:53	1
Sodium, Dissolved	3.3		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 21:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.9		0.50	0.28	mg/L			01/16/18 15:20	1
Sulfate, Dissolved	55		2.0	0.35	mg/L			01/16/18 15:20	1
Dissolved Organic Carbon	2.2	B	1.0	0.43	mg/L			01/16/18 13:37	1
Alkalinity, Dissolved	57		5.0	0.79	mg/L			01/16/18 15:04	1
Total Dissolved Solids	200		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-LSR01

Lab Sample ID: 480-130057-4

Date Collected: 01/11/18 09:59

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:10	1
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:10	1
Boron, Dissolved	5.3		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:10	1
Calcium, Dissolved	30		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:10	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:10	1
Magnesium, Dissolved	15		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:10	1
Manganese, Dissolved	0.0085		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:10	1
Molybdenum, Dissolved	1.0		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:10	1
Potassium, Dissolved	9.8		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:10	1
Selenium, Dissolved	0.30		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:10	1
Sodium, Dissolved	3.8		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.6		0.50	0.28	mg/L			01/16/18 15:28	1
Sulfate, Dissolved	71		2.0	0.35	mg/L			01/16/18 15:28	1
Dissolved Organic Carbon	3.0	B	1.0	0.43	mg/L			01/16/18 14:07	1
Alkalinity, Dissolved	71		5.0	0.79	mg/L			01/16/18 15:09	1
Total Dissolved Solids	260		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-LSR0.5

Lab Sample ID: 480-130057-5

Date Collected: 01/11/18 10:03

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.087	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:25	1
Arsenic, Dissolved	0.067		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:25	1
Boron, Dissolved	7.5		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:25	1
Calcium, Dissolved	38		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:25	1
Iron, Dissolved	0.037	J	0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:25	1
Magnesium, Dissolved	20		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:25	1
Manganese, Dissolved	0.013		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:25	1
Molybdenum, Dissolved	1.4		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:25	1
Potassium, Dissolved	12		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:25	1
Selenium, Dissolved	0.34		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:25	1
Sodium, Dissolved	5.2		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:25	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	2.5		1.0	0.56	mg/L			01/16/18 15:37	2
Sulfate, Dissolved	100		4.0	0.70	mg/L			01/16/18 15:37	2
Dissolved Organic Carbon	4.4	B	1.0	0.43	mg/L			01/16/18 15:06	1
Alkalinity, Dissolved	87		5.0	0.79	mg/L			01/17/18 21:16	1
Total Dissolved Solids	320		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area1-BLANK

Lab Sample ID: 480-130057-6

Date Collected: 01/11/18 10:07

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:28	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:28	1
Boron, Dissolved	0.017	J	0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:28	1
Calcium, Dissolved	0.15	J	0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:28	1
Iron, Dissolved	0.034	J	0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:28	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:28	1
Manganese, Dissolved	0.00051	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:28	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:28	1
Potassium, Dissolved	0.25	J	0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:28	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:28	1
Sodium, Dissolved	0.47	J	1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:28	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/16/18 15:45	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			01/17/18 16:40	1
Dissolved Organic Carbon	0.67	J B	1.0	0.43	mg/L			01/16/18 15:36	1
Alkalinity, Dissolved	2.0	J	5.0	0.79	mg/L			01/17/18 21:23	1
Total Dissolved Solids	5.0	J	10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area-2-LSR10

Lab Sample ID: 480-130057-7

Date Collected: 01/11/18 10:10

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.15	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:32	1
Arsenic, Dissolved	0.089		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:32	1
Boron, Dissolved	2.2		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:32	1
Calcium, Dissolved	20		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:32	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:32	1
Magnesium, Dissolved	3.0		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:32	1
Manganese, Dissolved	0.0031		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:32	1
Molybdenum, Dissolved	0.83		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:32	1
Potassium, Dissolved	5.3		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:32	1
Selenium, Dissolved	0.070		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:32	1
Sodium, Dissolved	1.5		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.67		0.50	0.28	mg/L			01/16/18 15:53	1
Sulfate, Dissolved	42		2.0	0.35	mg/L			01/16/18 15:53	1
Dissolved Organic Carbon	2.1	B	1.0	0.43	mg/L			01/16/18 17:05	1
Alkalinity, Dissolved	27		5.0	0.79	mg/L			01/17/18 21:45	1
Total Dissolved Solids	130		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area2-LSR05

Lab Sample ID: 480-130057-8

Date Collected: 01/11/18 10:15

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.077	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:35	1
Arsenic, Dissolved	0.089		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:35	1
Boron, Dissolved	3.4		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:35	1
Calcium, Dissolved	28		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:35	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:35	1
Magnesium, Dissolved	4.3		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:35	1
Manganese, Dissolved	0.0042		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:35	1
Molybdenum, Dissolved	1.2		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:35	1
Potassium, Dissolved	7.5		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:35	1
Selenium, Dissolved	0.099		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:35	1
Sodium, Dissolved	2.4		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:35	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.56		0.50	0.28	mg/L			01/16/18 16:01	1
Sulfate, Dissolved	61		2.0	0.35	mg/L			01/16/18 16:01	1
Dissolved Organic Carbon	2.5	B	1.0	0.43	mg/L			01/16/18 17:35	1
Alkalinity, Dissolved	34		5.0	0.79	mg/L			01/17/18 21:51	1
Total Dissolved Solids	210		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area2-LSR02

Lab Sample ID: 480-130057-9

Date Collected: 01/11/18 10:19

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.065	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:39	1
Arsenic, Dissolved	0.081		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:39	1
Boron, Dissolved	6.1		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:39	1
Calcium, Dissolved	49		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:39	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:39	1
Magnesium, Dissolved	8.1		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:39	1
Manganese, Dissolved	0.0073		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:39	1
Molybdenum, Dissolved	2.2		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:39	1
Potassium, Dissolved	12		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:39	1
Selenium, Dissolved	0.17		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:39	1
Sodium, Dissolved	4.0		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:39	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.85	J	1.0	0.56	mg/L			01/16/18 16:09	2
Sulfate, Dissolved	120		4.0	0.70	mg/L			01/16/18 16:09	2
Dissolved Organic Carbon	2.3	B	1.0	0.43	mg/L			01/16/18 18:04	1
Alkalinity, Dissolved	41		5.0	0.79	mg/L			01/17/18 21:58	1
Total Dissolved Solids	270		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area2-LSR01

Lab Sample ID: 480-130057-10

Date Collected: 01/11/18 10:22

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.071	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:42	1
Arsenic, Dissolved	0.088		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:42	1
Boron, Dissolved	8.3		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:42	1
Calcium, Dissolved	72		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:42	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:42	1
Magnesium, Dissolved	12		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:42	1
Manganese, Dissolved	0.013		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:42	1
Molybdenum, Dissolved	3.3		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:42	1
Potassium, Dissolved	16		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:42	1
Selenium, Dissolved	0.26		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:42	1
Sodium, Dissolved	5.5		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:42	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.4		1.0	0.56	mg/L			01/16/18 16:17	2
Sulfate, Dissolved	190		4.0	0.70	mg/L			01/16/18 16:17	2
Dissolved Organic Carbon	3.3	B	1.0	0.43	mg/L			01/16/18 19:03	1
Alkalinity, Dissolved	50		5.0	0.79	mg/L			01/17/18 22:05	1
Total Dissolved Solids	460		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area2-LSR0.5

Lab Sample ID: 480-130057-11

Date Collected: 01/11/18 10:26

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:46	1
Arsenic, Dissolved	0.082		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:46	1
Boron, Dissolved	11		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:46	1
Calcium, Dissolved	84		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:46	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:46	1
Magnesium, Dissolved	13		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:46	1
Manganese, Dissolved	0.016		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:46	1
Molybdenum, Dissolved	4.0		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:46	1
Potassium, Dissolved	20		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:46	1
Selenium, Dissolved	0.32		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:46	1
Sodium, Dissolved	6.6		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			01/16/18 16:25	5
Sulfate, Dissolved	230		10	1.7	mg/L			01/16/18 16:25	5
Dissolved Organic Carbon	4.2	B	1.0	0.43	mg/L			01/16/18 19:33	1
Alkalinity, Dissolved	56		5.0	0.79	mg/L			01/17/18 22:12	1
Total Dissolved Solids	500		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area2-BLANK

Lab Sample ID: 480-130057-12

Date Collected: 01/11/18 10:29

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		01/16/18 08:52	01/16/18 22:50	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:50	1
Boron, Dissolved	0.026		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 22:50	1
Calcium, Dissolved	0.21	J	0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:50	1
Iron, Dissolved	0.027	J	0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:50	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 22:50	1
Manganese, Dissolved	0.0014	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:50	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 22:50	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:50	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:50	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/17/18 13:16	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			01/17/18 13:16	1
Dissolved Organic Carbon	0.52	J B	1.0	0.43	mg/L			01/16/18 20:03	1
Alkalinity, Dissolved	1.4	J	5.0	0.79	mg/L			01/17/18 22:19	1
Total Dissolved Solids	7.0	J	10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-LSR10

Lab Sample ID: 480-130057-13

Date Collected: 01/11/18 10:32

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.30	J	0.40	0.12	mg/L		01/16/18 08:52	01/17/18 16:42	2
Arsenic, Dissolved	0.21		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 22:53	1
Boron, Dissolved	2.3		0.040	0.0080	mg/L		01/16/18 08:52	01/17/18 16:42	2
Calcium, Dissolved	41		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:53	1
Iron, Dissolved	0.076		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 22:53	1
Magnesium, Dissolved	0.53		0.40	0.087	mg/L		01/16/18 08:52	01/17/18 16:42	2
Manganese, Dissolved	0.0025	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 22:53	1
Molybdenum, Dissolved	4.9		0.020	0.0071	mg/L		01/16/18 08:52	01/17/18 16:42	2
Potassium, Dissolved	15		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 22:53	1
Selenium, Dissolved	0.12		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 22:53	1
Sodium, Dissolved	2.5		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 22:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	6.1		0.50	0.28	mg/L			01/17/18 13:24	1
Sulfate, Dissolved	35		2.0	0.35	mg/L			01/17/18 13:24	1
Dissolved Organic Carbon	13	B	1.0	0.43	mg/L			01/16/18 21:02	1
Alkalinity, Dissolved	55		5.0	0.79	mg/L			01/17/18 22:27	1
Total Dissolved Solids	970		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-LSR05

Lab Sample ID: 480-130057-14

Date Collected: 01/11/18 10:36

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.42		0.40	0.12	mg/L		01/16/18 08:52	01/17/18 16:45	2
Arsenic, Dissolved	0.21		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 23:08	1
Boron, Dissolved	3.3		0.040	0.0080	mg/L		01/16/18 08:52	01/17/18 16:45	2
Calcium, Dissolved	49		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:08	1
Iron, Dissolved	0.053		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 23:08	1
Magnesium, Dissolved	0.35	J	0.40	0.087	mg/L		01/16/18 08:52	01/17/18 16:45	2
Manganese, Dissolved	0.0025	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 23:08	1
Molybdenum, Dissolved	6.6		0.020	0.0071	mg/L		01/16/18 08:52	01/17/18 16:45	2
Potassium, Dissolved	14		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:08	1
Selenium, Dissolved	0.17		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 23:08	1
Sodium, Dissolved	2.1		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 23:08	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.76		0.50	0.28	mg/L			01/17/18 13:33	1
Sulfate, Dissolved	39		2.0	0.35	mg/L			01/17/18 13:33	1
Dissolved Organic Carbon	11	B	1.0	0.43	mg/L			01/16/18 21:32	1
Alkalinity, Dissolved	57		5.0	0.79	mg/L			01/17/18 22:34	1
Total Dissolved Solids	320		10	4.0	mg/L			01/14/18 10:51	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-LSR02

Lab Sample ID: 480-130057-15

Date Collected: 01/11/18 10:40

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.44	J	1.0	0.30	mg/L		01/16/18 08:52	01/17/18 16:59	5
Arsenic, Dissolved	0.20		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 23:11	1
Boron, Dissolved	5.7		0.10	0.020	mg/L		01/16/18 08:52	01/17/18 16:59	5
Calcium, Dissolved	110		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:11	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 23:11	1
Magnesium, Dissolved	0.84	J	1.0	0.22	mg/L		01/16/18 08:52	01/17/18 16:59	5
Manganese, Dissolved	0.0037		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 23:11	1
Molybdenum, Dissolved	21		0.050	0.018	mg/L		01/16/18 08:52	01/17/18 16:59	5
Potassium, Dissolved	31		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:11	1
Selenium, Dissolved	0.23		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 23:11	1
Sodium, Dissolved	5.7		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 23:11	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	2.2		1.0	0.56	mg/L			01/17/18 13:41	2
Sulfate, Dissolved	130		4.0	0.70	mg/L			01/17/18 13:41	2
Dissolved Organic Carbon	21	B	1.0	0.43	mg/L			01/17/18 00:00	1
Alkalinity, Dissolved	61		5.0	0.79	mg/L			01/17/18 22:41	1
Total Dissolved Solids	680	B	10	4.0	mg/L			01/16/18 22:30	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-LSR01

Lab Sample ID: 480-130057-16

Date Collected: 01/11/18 10:42

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.66	J	2.0	0.60	mg/L		01/16/18 08:52	01/17/18 17:03	10
Arsenic, Dissolved	0.18		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 23:15	1
Boron, Dissolved	6.6		0.20	0.040	mg/L		01/16/18 08:52	01/17/18 17:03	10
Calcium, Dissolved	170		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:15	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 23:15	1
Magnesium, Dissolved	0.67	J	2.0	0.43	mg/L		01/16/18 08:52	01/17/18 17:03	10
Manganese, Dissolved	0.0027	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 23:15	1
Molybdenum, Dissolved	32		0.10	0.036	mg/L		01/16/18 08:52	01/17/18 17:03	10
Potassium, Dissolved	41		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:15	1
Selenium, Dissolved	0.26		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 23:15	1
Sodium, Dissolved	7.4		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 23:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	3.3		2.5	1.4	mg/L			01/17/18 13:49	5
Sulfate, Dissolved	170		10	1.7	mg/L			01/17/18 13:49	5
Dissolved Organic Carbon	35	B	1.0	0.43	mg/L			01/17/18 00:30	1
Alkalinity, Dissolved	79		5.0	0.79	mg/L			01/17/18 22:48	1
Total Dissolved Solids	290	B	10	4.0	mg/L			01/16/18 22:30	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-LSR0.5

Lab Sample ID: 480-130057-17

Date Collected: 01/11/18 10:45

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.74	J	2.0	0.60	mg/L		01/16/18 08:52	01/17/18 17:07	10
Arsenic, Dissolved	0.16		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 23:18	1
Boron, Dissolved	6.2		0.20	0.040	mg/L		01/16/18 08:52	01/17/18 17:07	10
Calcium, Dissolved	180		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:18	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 23:18	1
Magnesium, Dissolved	0.78	J	2.0	0.43	mg/L		01/16/18 08:52	01/17/18 17:07	10
Manganese, Dissolved	0.0018	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 23:18	1
Molybdenum, Dissolved	34		0.10	0.036	mg/L		01/16/18 08:52	01/17/18 17:07	10
Potassium, Dissolved	42		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:18	1
Selenium, Dissolved	0.30		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 23:18	1
Sodium, Dissolved	8.3		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 23:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	2.8		2.5	1.4	mg/L			01/17/18 14:38	5
Sulfate, Dissolved	130		10	1.7	mg/L			01/17/18 14:38	5
Dissolved Organic Carbon	53	B	1.0	0.43	mg/L			01/17/18 01:00	1
Alkalinity, Dissolved	95		5.0	0.79	mg/L			01/17/18 23:58	1
Total Dissolved Solids	1100	B	10	4.0	mg/L			01/16/18 22:30	1

Client Sample Results

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

TestAmerica Job ID: 480-130057-1

Client Sample ID: 1316-Area3-BLANK

Lab Sample ID: 480-130057-18

Date Collected: 01/11/18 10:48

Matrix: Water

Date Received: 01/12/18 15:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.11	J	0.20	0.060	mg/L		01/16/18 08:52	01/16/18 23:22	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 23:22	1
Boron, Dissolved	0.047		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 23:22	1
Calcium, Dissolved	1.1		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:22	1
Iron, Dissolved	0.13		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 23:22	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 23:22	1
Manganese, Dissolved	0.00084	J	0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 23:22	1
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 23:22	1
Potassium, Dissolved	0.51		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 23:22	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 23:22	1
Sodium, Dissolved	0.55	J	1.0	0.32	mg/L		01/16/18 08:52	01/16/18 23:22	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/17/18 14:46	1
Sulfate, Dissolved	0.77	J	2.0	0.35	mg/L			01/17/18 14:46	1
Dissolved Organic Carbon	0.93	J B	1.0	0.43	mg/L			01/17/18 01:29	1
Alkalinity, Dissolved	2.6	J	5.0	0.79	mg/L			01/18/18 00:05	1
Total Dissolved Solids	30	B	10	4.0	mg/L			01/16/18 22:30	1

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-395871/1-A
Matrix: Water
Analysis Batch: 396100

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 395871

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		01/16/18 08:52	01/16/18 21:28	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		01/16/18 08:52	01/16/18 21:28	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		01/16/18 08:52	01/16/18 21:28	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:28	1
Iron, Dissolved	ND		0.050	0.019	mg/L		01/16/18 08:52	01/16/18 21:28	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		01/16/18 08:52	01/16/18 21:28	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		01/16/18 08:52	01/16/18 21:28	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		01/16/18 08:52	01/16/18 21:28	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		01/16/18 08:52	01/16/18 21:28	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		01/16/18 08:52	01/16/18 21:28	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		01/16/18 08:52	01/16/18 21:28	1

Lab Sample ID: LCS 480-395871/2-A
Matrix: Water
Analysis Batch: 396100

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 395871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	9.92		mg/L		99	80 - 120
Arsenic, Dissolved	0.200	0.201		mg/L		100	80 - 120
Boron, Dissolved	0.200	0.199		mg/L		100	80 - 120
Calcium, Dissolved	10.0	9.94		mg/L		99	80 - 120
Iron, Dissolved	10.0	9.84		mg/L		98	80 - 120
Magnesium, Dissolved	10.0	10.1		mg/L		101	80 - 120
Manganese, Dissolved	0.200	0.213		mg/L		106	80 - 120
Molybdenum, Dissolved	0.200	0.197		mg/L		99	80 - 120
Potassium, Dissolved	10.0	10.1		mg/L		101	80 - 120
Selenium, Dissolved	0.200	0.196		mg/L		98	80 - 120
Sodium, Dissolved	10.0	9.64		mg/L		96	80 - 120

Lab Sample ID: 480-130057-3 MS
Matrix: Water
Analysis Batch: 396100

Client Sample ID: 1316-Area1-LSR02
Prep Type: Dissolved
Prep Batch: 395871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	0.068	J	10.0	9.74		mg/L		97	75 - 125
Arsenic, Dissolved	0.072		0.200	0.278		mg/L		103	75 - 125
Boron, Dissolved	4.7		0.200	4.64	4	mg/L		-26	75 - 125
Calcium, Dissolved	23		10.0	32.0		mg/L		86	75 - 125
Iron, Dissolved	ND		10.0	9.72		mg/L		97	75 - 125
Magnesium, Dissolved	12		10.0	21.4		mg/L		95	75 - 125
Manganese, Dissolved	0.0062		0.200	0.215		mg/L		105	75 - 125
Molybdenum, Dissolved	0.81		0.200	0.962	4	mg/L		78	75 - 125
Potassium, Dissolved	8.2		10.0	18.0		mg/L		97	75 - 125
Selenium, Dissolved	0.22		0.200	0.412		mg/L		95	75 - 125
Sodium, Dissolved	3.3		10.0	12.9		mg/L		96	75 - 125

TestAmerica Buffalo

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

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

Lab Sample ID: 480-130057-3 MSD

Matrix: Water

Analysis Batch: 396100

Client Sample ID: 1316-Area1-LSR02

Prep Type: Dissolved

Prep Batch: 395871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Aluminum, Dissolved	0.068	J	10.0	9.97		mg/L		99	75 - 125	2	20	
Arsenic, Dissolved	0.072		0.200	0.282		mg/L		105	75 - 125	1	20	
Boron, Dissolved	4.7		0.200	4.91	4	mg/L		109	75 - 125	6	20	
Calcium, Dissolved	23		10.0	33.3		mg/L		98	75 - 125	4	20	
Iron, Dissolved	ND		10.0	9.75		mg/L		97	75 - 125	0	20	
Magnesium, Dissolved	12		10.0	22.2		mg/L		103	75 - 125	4	20	
Manganese, Dissolved	0.0062		0.200	0.218		mg/L		106	75 - 125	1	20	
Molybdenum, Dissolved	0.81		0.200	1.01	4	mg/L		102	75 - 125	5	20	
Potassium, Dissolved	8.2		10.0	18.6		mg/L		104	75 - 125	3	20	
Selenium, Dissolved	0.22		0.200	0.422		mg/L		101	75 - 125	3	20	
Sodium, Dissolved	3.3		10.0	13.1		mg/L		98	75 - 125	1	20	

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-395938/21

Matrix: Water

Analysis Batch: 395938

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/16/18 13:51	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			01/16/18 13:51	1

Lab Sample ID: LCS 480-395938/20

Matrix: Water

Analysis Batch: 395938

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Chloride, Dissolved	50.0	48.7		mg/L		97	90 - 110	
Sulfate, Dissolved	50.0	46.7		mg/L		93	90 - 110	

Lab Sample ID: MB 480-396165/28

Matrix: Water

Analysis Batch: 396165

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/17/18 16:24	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			01/17/18 16:24	1

Lab Sample ID: MB 480-396165/4

Matrix: Water

Analysis Batch: 396165

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride, Dissolved	ND		0.50	0.28	mg/L			01/17/18 13:08	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			01/17/18 13:08	1

TestAmerica Buffalo

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-396165/27
Matrix: Water
Analysis Batch: 396165

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	48.8		mg/L		98	90 - 110
Sulfate, Dissolved	50.0	47.6		mg/L		95	90 - 110

Lab Sample ID: LCS 480-396165/3
Matrix: Water
Analysis Batch: 396165

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	48.7		mg/L		97	90 - 110
Sulfate, Dissolved	50.0	48.6		mg/L		97	90 - 110

Lab Sample ID: 480-130057-11 MS
Matrix: Water
Analysis Batch: 395938

Client Sample ID: 1316-Area2-LSR0.5
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		250	250		mg/L		100	81 - 120
Sulfate, Dissolved	230		250	451		mg/L		89	80 - 120

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-396210/27
Matrix: Water
Analysis Batch: 396210

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.584	J	1.0	0.43	mg/L			01/16/18 23:01	1

Lab Sample ID: MB 480-396210/3
Matrix: Water
Analysis Batch: 396210

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.627	J	1.0	0.43	mg/L			01/16/18 11:09	1

Lab Sample ID: LCS 480-396210/28
Matrix: Water
Analysis Batch: 396210

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	60.3		mg/L		100	90 - 110

Lab Sample ID: LCS 480-396210/4
Matrix: Water
Analysis Batch: 396210

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	59.3		mg/L		99	90 - 110

TestAmerica Buffalo

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

Method: 9060A - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 480-130057-4 MS

Matrix: Water

Analysis Batch: 396210

Client Sample ID: 1316-Area1-LSR01

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	3.0	B	20.0	22.1		mg/L		96	54 - 131

Lab Sample ID: 480-130057-12 MS

Matrix: Water

Analysis Batch: 396210

Client Sample ID: 1316-Area2-BLANK

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	0.52	J B	20.0	19.4		mg/L		94	54 - 131

Lab Sample ID: 480-130057-1 DU

Matrix: Water

Analysis Batch: 396210

Client Sample ID: 1316-Area1-LSR10

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	1.7	B	1.72		mg/L		0.6	20

Lab Sample ID: 480-130057-9 DU

Matrix: Water

Analysis Batch: 396210

Client Sample ID: 1316-Area2-LSR02

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	2.3	B	2.34		mg/L		3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-396075/7

Matrix: Water

Analysis Batch: 396075

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			01/16/18 14:03	1

Lab Sample ID: LCS 480-396075/8

Matrix: Water

Analysis Batch: 396075

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	99.6		mg/L		100	90 - 110

Lab Sample ID: MB 480-396328/30

Matrix: Water

Analysis Batch: 396328

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			01/17/18 23:08	1

TestAmerica Buffalo

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 480-396328/7
Matrix: Water
Analysis Batch: 396328

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			01/17/18 20:11	1

Lab Sample ID: LCS 480-396328/31
Matrix: Water
Analysis Batch: 396328

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	96.1		mg/L		96	90 - 110

Lab Sample ID: LCS 480-396328/8
Matrix: Water
Analysis Batch: 396328

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	99.4		mg/L		99	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-395730/1
Matrix: Water
Analysis Batch: 395730

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			01/14/18 10:51	1

Lab Sample ID: LCS 480-395730/2
Matrix: Water
Analysis Batch: 395730

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	506		mg/L		101	85 - 115

Lab Sample ID: MB 480-396063/1
Matrix: Water
Analysis Batch: 396063

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4.00	J	10	4.0	mg/L			01/16/18 22:30	1

Lab Sample ID: LCS 480-396063/2
Matrix: Water
Analysis Batch: 396063

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	511		mg/L		102	85 - 115

TestAmerica Buffalo

QC Sample Results

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

TestAmerica Job ID: 480-130057-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 480-130057-1 DU
Matrix: Water
Analysis Batch: 395730

Client Sample ID: 1316-Area1-LSR10
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	140		135		mg/L		0	10

Lab Sample ID: 480-130057-14 DU
Matrix: Water
Analysis Batch: 395730

Client Sample ID: 1316-Area3-LSR05
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	320		315		mg/L		0.3	10

Lab Sample ID: 480-130057-17 DU
Matrix: Water
Analysis Batch: 396063

Client Sample ID: 1316-Area3-LSR0.5
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1100	B	1100		mg/L		0.5	10

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

QC Association Summary

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

TestAmerica Job ID: 480-130057-1

Metals

Prep Batch: 395871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	3005A	
480-130057-2	1316-Area1-LSR05	Dissolved	Water	3005A	
480-130057-3	1316-Area1-LSR02	Dissolved	Water	3005A	
480-130057-4	1316-Area1-LSR01	Dissolved	Water	3005A	
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	3005A	
480-130057-6	1316-Area1-BLANK	Dissolved	Water	3005A	
480-130057-7	1316-Area2-LSR10	Dissolved	Water	3005A	
480-130057-8	1316-Area2-LSR05	Dissolved	Water	3005A	
480-130057-9	1316-Area2-LSR02	Dissolved	Water	3005A	
480-130057-10	1316-Area2-LSR01	Dissolved	Water	3005A	
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	3005A	
480-130057-12	1316-Area2-BLANK	Dissolved	Water	3005A	
480-130057-13	1316-Area3-LSR10	Dissolved	Water	3005A	
480-130057-14	1316-Area3-LSR05	Dissolved	Water	3005A	
480-130057-15	1316-Area3-LSR02	Dissolved	Water	3005A	
480-130057-16	1316-Area3-LSR01	Dissolved	Water	3005A	
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	3005A	
480-130057-18	1316-Area3-BLANK	Dissolved	Water	3005A	
MB 480-395871/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-395871/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
480-130057-3 MS	1316-Area1-LSR02	Dissolved	Water	3005A	
480-130057-3 MSD	1316-Area1-LSR02	Dissolved	Water	3005A	

Analysis Batch: 396100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	6010C	395871
480-130057-2	1316-Area1-LSR05	Dissolved	Water	6010C	395871
480-130057-3	1316-Area1-LSR02	Dissolved	Water	6010C	395871
480-130057-4	1316-Area1-LSR01	Dissolved	Water	6010C	395871
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	6010C	395871
480-130057-6	1316-Area1-BLANK	Dissolved	Water	6010C	395871
480-130057-7	1316-Area2-LSR10	Dissolved	Water	6010C	395871
480-130057-8	1316-Area2-LSR05	Dissolved	Water	6010C	395871
480-130057-9	1316-Area2-LSR02	Dissolved	Water	6010C	395871
480-130057-10	1316-Area2-LSR01	Dissolved	Water	6010C	395871
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	6010C	395871
480-130057-12	1316-Area2-BLANK	Dissolved	Water	6010C	395871
480-130057-13	1316-Area3-LSR10	Dissolved	Water	6010C	395871
480-130057-14	1316-Area3-LSR05	Dissolved	Water	6010C	395871
480-130057-15	1316-Area3-LSR02	Dissolved	Water	6010C	395871
480-130057-16	1316-Area3-LSR01	Dissolved	Water	6010C	395871
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	6010C	395871
480-130057-18	1316-Area3-BLANK	Dissolved	Water	6010C	395871
MB 480-395871/1-A	Method Blank	Total Recoverable	Water	6010C	395871
LCS 480-395871/2-A	Lab Control Sample	Total Recoverable	Water	6010C	395871
480-130057-3 MS	1316-Area1-LSR02	Dissolved	Water	6010C	395871
480-130057-3 MSD	1316-Area1-LSR02	Dissolved	Water	6010C	395871

Analysis Batch: 396321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-13	1316-Area3-LSR10	Dissolved	Water	6010C	395871

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QC Association Summary

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

TestAmerica Job ID: 480-130057-1

Metals (Continued)

Analysis Batch: 396321 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-14	1316-Area3-LSR05	Dissolved	Water	6010C	395871
480-130057-15	1316-Area3-LSR02	Dissolved	Water	6010C	395871
480-130057-16	1316-Area3-LSR01	Dissolved	Water	6010C	395871
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	6010C	395871

General Chemistry

Analysis Batch: 395730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	SM 2540C	
480-130057-2	1316-Area1-LSR05	Dissolved	Water	SM 2540C	
480-130057-3	1316-Area1-LSR02	Dissolved	Water	SM 2540C	
480-130057-4	1316-Area1-LSR01	Dissolved	Water	SM 2540C	
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	SM 2540C	
480-130057-6	1316-Area1-BLANK	Dissolved	Water	SM 2540C	
480-130057-7	1316-Area2-LSR10	Dissolved	Water	SM 2540C	
480-130057-8	1316-Area2-LSR05	Dissolved	Water	SM 2540C	
480-130057-9	1316-Area2-LSR02	Dissolved	Water	SM 2540C	
480-130057-10	1316-Area2-LSR01	Dissolved	Water	SM 2540C	
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	SM 2540C	
480-130057-12	1316-Area2-BLANK	Dissolved	Water	SM 2540C	
480-130057-13	1316-Area3-LSR10	Dissolved	Water	SM 2540C	
480-130057-14	1316-Area3-LSR05	Dissolved	Water	SM 2540C	
MB 480-395730/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-395730/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-130057-1 DU	1316-Area1-LSR10	Dissolved	Water	SM 2540C	
480-130057-14 DU	1316-Area3-LSR05	Dissolved	Water	SM 2540C	

Analysis Batch: 395938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	9056A	
480-130057-2	1316-Area1-LSR05	Dissolved	Water	9056A	
480-130057-3	1316-Area1-LSR02	Dissolved	Water	9056A	
480-130057-4	1316-Area1-LSR01	Dissolved	Water	9056A	
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	9056A	
480-130057-6	1316-Area1-BLANK	Dissolved	Water	9056A	
480-130057-7	1316-Area2-LSR10	Dissolved	Water	9056A	
480-130057-8	1316-Area2-LSR05	Dissolved	Water	9056A	
480-130057-9	1316-Area2-LSR02	Dissolved	Water	9056A	
480-130057-10	1316-Area2-LSR01	Dissolved	Water	9056A	
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	9056A	
MB 480-395938/21	Method Blank	Total/NA	Water	9056A	
LCS 480-395938/20	Lab Control Sample	Total/NA	Water	9056A	
480-130057-11 MS	1316-Area2-LSR0.5	Dissolved	Water	9056A	

Analysis Batch: 396063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-15	1316-Area3-LSR02	Dissolved	Water	SM 2540C	
480-130057-16	1316-Area3-LSR01	Dissolved	Water	SM 2540C	
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	SM 2540C	

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QC Association Summary

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

TestAmerica Job ID: 480-130057-1

General Chemistry (Continued)

Analysis Batch: 396063 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-18	1316-Area3-BLANK	Dissolved	Water	SM 2540C	
MB 480-396063/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-396063/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-130057-17 DU	1316-Area3-LSR0.5	Dissolved	Water	SM 2540C	

Analysis Batch: 396075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-3	1316-Area1-LSR02	Dissolved	Water	SM 2320B	
480-130057-4	1316-Area1-LSR01	Dissolved	Water	SM 2320B	
MB 480-396075/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-396075/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 396165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-6	1316-Area1-BLANK	Dissolved	Water	9056A	
480-130057-12	1316-Area2-BLANK	Dissolved	Water	9056A	
480-130057-13	1316-Area3-LSR10	Dissolved	Water	9056A	
480-130057-14	1316-Area3-LSR05	Dissolved	Water	9056A	
480-130057-15	1316-Area3-LSR02	Dissolved	Water	9056A	
480-130057-16	1316-Area3-LSR01	Dissolved	Water	9056A	
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	9056A	
480-130057-18	1316-Area3-BLANK	Dissolved	Water	9056A	
MB 480-396165/28	Method Blank	Total/NA	Water	9056A	
MB 480-396165/4	Method Blank	Total/NA	Water	9056A	
LCS 480-396165/27	Lab Control Sample	Total/NA	Water	9056A	
LCS 480-396165/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 396210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	9060A	
480-130057-2	1316-Area1-LSR05	Dissolved	Water	9060A	
480-130057-3	1316-Area1-LSR02	Dissolved	Water	9060A	
480-130057-4	1316-Area1-LSR01	Dissolved	Water	9060A	
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	9060A	
480-130057-6	1316-Area1-BLANK	Dissolved	Water	9060A	
480-130057-7	1316-Area2-LSR10	Dissolved	Water	9060A	
480-130057-8	1316-Area2-LSR05	Dissolved	Water	9060A	
480-130057-9	1316-Area2-LSR02	Dissolved	Water	9060A	
480-130057-10	1316-Area2-LSR01	Dissolved	Water	9060A	
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	9060A	
480-130057-12	1316-Area2-BLANK	Dissolved	Water	9060A	
480-130057-13	1316-Area3-LSR10	Dissolved	Water	9060A	
480-130057-14	1316-Area3-LSR05	Dissolved	Water	9060A	
480-130057-15	1316-Area3-LSR02	Dissolved	Water	9060A	
480-130057-16	1316-Area3-LSR01	Dissolved	Water	9060A	
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	9060A	
480-130057-18	1316-Area3-BLANK	Dissolved	Water	9060A	
MB 480-396210/27	Method Blank	Dissolved	Water	9060A	
MB 480-396210/3	Method Blank	Dissolved	Water	9060A	
LCS 480-396210/28	Lab Control Sample	Dissolved	Water	9060A	
LCS 480-396210/4	Lab Control Sample	Dissolved	Water	9060A	

TestAmerica Buffalo

QC Association Summary

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

TestAmerica Job ID: 480-130057-1

General Chemistry (Continued)

Analysis Batch: 396210 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-4 MS	1316-Area1-LSR01	Dissolved	Water	9060A	
480-130057-12 MS	1316-Area2-BLANK	Dissolved	Water	9060A	
480-130057-1 DU	1316-Area1-LSR10	Dissolved	Water	9060A	
480-130057-9 DU	1316-Area2-LSR02	Dissolved	Water	9060A	

Analysis Batch: 396328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-130057-1	1316-Area1-LSR10	Dissolved	Water	SM 2320B	
480-130057-2	1316-Area1-LSR05	Dissolved	Water	SM 2320B	
480-130057-5	1316-Area1-LSR0.5	Dissolved	Water	SM 2320B	
480-130057-6	1316-Area1-BLANK	Dissolved	Water	SM 2320B	
480-130057-7	1316-Area2-LSR10	Dissolved	Water	SM 2320B	
480-130057-8	1316-Area2-LSR05	Dissolved	Water	SM 2320B	
480-130057-9	1316-Area2-LSR02	Dissolved	Water	SM 2320B	
480-130057-10	1316-Area2-LSR01	Dissolved	Water	SM 2320B	
480-130057-11	1316-Area2-LSR0.5	Dissolved	Water	SM 2320B	
480-130057-12	1316-Area2-BLANK	Dissolved	Water	SM 2320B	
480-130057-13	1316-Area3-LSR10	Dissolved	Water	SM 2320B	
480-130057-14	1316-Area3-LSR05	Dissolved	Water	SM 2320B	
480-130057-15	1316-Area3-LSR02	Dissolved	Water	SM 2320B	
480-130057-16	1316-Area3-LSR01	Dissolved	Water	SM 2320B	
480-130057-17	1316-Area3-LSR0.5	Dissolved	Water	SM 2320B	
480-130057-18	1316-Area3-BLANK	Dissolved	Water	SM 2320B	
MB 480-396328/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-396328/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-396328/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-396328/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Accreditation/Certification Summary

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

TestAmerica Job ID: 480-130057-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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

TestAmerica Buffalo

10 Hazelwood Drive

Chain of Custody Record

681-Atlanta

TestAmerica

THE LEADER IN ENVIR

Amherst, NY 14228-2223
phone 716.691.2600 fax 716.691.7991

Regulatory Program: DW NPDES RCRA Other:

TestAmerica L



Client Contact AMEC Foster Wheeler E & I, Inc 271 Mill Road Chelmsford, MA 01824 (219) 647-5248 Phone (219) 647-5271 FAX Project Name: Bailly Generating Station Site: Indiana P O # S277781	Project Manager: Ms. Denise King Tel/Fax: 219-647-5248	Site Contact: Lab Contact: Schove, John R	Date: 01-11-17 Carrier: FEDEX	COC No: 1 of 2 Sampler: Tomeci. 480-130057 COC For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below <u>X</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <u>See Below</u> <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample (Y/N) Perform MS / MSD (Y/N) 9056A - 280 - IC - Cl & SO4 6010C - Site Specific Metals, Dissolved 9060A - Diss - Organic Carbon, Dissolved (DOC) 2540C - Calc'd - Solids, Total Dissolved (TDS) 2328B - Alkalinity		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	9056A - 280 - IC - Cl & SO4	6010C - Site Specific Metals, Dissolved	9060A - Diss - Organic Carbon, Dissolved (DOC)	2540C - Calc'd - Solids, Total Dissolved (TDS)	2328B - Alkalinity	Sample Specific Notes:
Area #1 T01	1-11-17	945	G	W	6	Y	X	X	X	X	X		
Area #1 T02		951				Y	X	X	X	X			
Area #1 T03		955				Y	X	X	X	X			
Area #1 T04		959				Y	X	X	X	X			
Area #1 T05		1003				Y	X	X	X	X			
Area #1 Blank		1007				Y	X	X	X	X			
Area #2 T01		1010				Y	X	X	X	X			
Area #2 T02		1015				Y	X	X	X	X			
Area #2 T03		1019				Y	X	X	X	X			
Area #2 T04		1022				Y	X	X	X	X			
Area #2 T05		1026				Y	X	X	X	X			
Area #2 Blank		1029				Y	X	X	X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown

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 & Comments: * 5 DAY TAT*
Results due January 19, 2018 #1 1:4, 1.2

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C):	Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: <u>Jamecia Bradley</u>	Company: <u>Kemron</u>	Date/Time: <u>1-11-17 11:43</u>	Received by: <u>[Signature]</u>	Company: <u>[Signature]</u>	Date/Time: <u>1/11/18 11:43</u>
Relinquished by: <u>[Signature]</u>	Company: <u>[Signature]</u>	Date/Time: <u>1-11-18</u>	Received by: <u>[Signature]</u>	Company: <u>IAB</u>	Date/Time: <u>1/12/18 1305</u>
Relinquished by: <u>[Signature]</u>	Company: <u>[Signature]</u>	Date/Time: <u>[Signature]</u>	Received in Laboratory by: <u>[Signature]</u>	Company: <u>[Signature]</u>	Date/Time: <u>[Signature]</u>



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4/17/2018 (Rev. 1)

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other:

Client Contact AMEC Foster Wheeler E & I, Inc 271 Mill Road Chelmsford, MA 01824 (219) 647-5248 Phone (219) 647-5271 FAX Project Name: Bailly Generating Station Site: Indiana P O # S277781		Project Manager: Ms. Denise King Tel/Fax: 219-647-5248		Site Contact: Lab Contact: Schove, John R		Date: 01-11-17 Carrier: FEDEX		COC No: 2 of 2 COCs Sampler: Tomecia Bradley For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:								
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below <u>X</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day SEE BELOW		Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	9056A_28D - IC - Cl & SO4	6010C - Site Specific Metals, Dissolved	9060A_Diss - Organic Carbon, Dissolved (DOC)	2540C_Calcd - Solids, Total Dissolved (TDS)	2320B - Alkalinity	Sample Specific Notes:
Area #3 TD4		1-11-17	1032	G	W	6	Y	X	X	X	X	X	X	X		
Area #3 TD2			1036					Y	X	X	X	X	X	X		
Area #3 TD3			1040					Y	X	X	X	X	X	X		
Area #3 TD4			1042					Y	X	X	X	X	X	X		
Area #3 TD5			1045					Y	X	X	X	X	X	X		
Area #3 Blank			1048					Y	X	X	X	X	X	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other										4a						
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months						
Special Instructions/QC Requirements & Comments: * 5 DAY TAT * Results due January 19, 2018										#1 1.4, 1.2						
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Corr'd:		Therm ID No.:								
Relinquished by: Tomecia Bradley		Company: Kenron		Date/Time: 1-11-17 11:43		Received by: [Signature]		Company: TAB		Date/Time: 1/11/18 11:43						
Relinquished by: [Signature]		Company: TD		Date/Time: 1/11/18 16:02		Received by: [Signature]		Company: TAB		Date/Time: 1-12-18 1505						

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-130057-1

Login Number: 130057

List Number: 1

Creator: Harper, Marcus D

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	KEMRON
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Reviewed 04/13/2018
Elizabeth Penta
Wood. PLC

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: 480-132907-1

Client Project/Site: Bailly Treatability Study

Revision: 1


For:

AMEC Foster Wheeler E & I, Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

4/13/2018 1:52:27 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.

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Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-132907-1	1312-PC3-14D	Solid	03/19/18 12:45	03/20/18 10:40
480-132907-2	1312-PC6-14D	Solid	03/19/18 12:50	03/20/18 10:40
480-132907-3	1312-PC3FS1-14D	Solid	03/19/18 12:55	03/20/18 10:40
480-132907-4	1312-CC3-14D	Solid	03/19/18 13:00	03/20/18 10:40
480-132907-5	1312-PC3HLDM-14D	Solid	03/19/18 13:05	03/20/18 10:40
480-132907-6	1312-PC3-14D DUP	Solid	03/19/18 12:45	03/20/18 10:40
480-132907-7	1312-PC6-14D DUP	Solid	03/19/18 12:50	03/20/18 10:40
480-132907-8	1312-PC3FS1-14D DUP	Solid	03/19/18 12:55	03/20/18 10:40
480-132907-9	1312-CC3-14D DUP	Solid	03/19/18 13:00	03/20/18 10:40
480-132907-10	1312-PC3HLDM-14D DUP	Solid	03/19/18 13:05	03/20/18 10:40

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
9060A	Organic Carbon, Total (TOC)	SW846	TAL BUF

Protocol References:

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



Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
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
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Treatability Study

TestAmerica Job ID: 480-132907-1

Job ID: 480-132907-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-132907-1**

Revision

This report has been revised to change all the client ID's requested on 4/11/2018.

Receipt

The samples were received on 3/20/2018 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

Metals

Method(s) 6010C: Sodium is elevated in the Leachate Blank, LB 480-406167. Due to the possibility of Sodium being a trace element in the SPLP fluid, the data has been qualified and reported.

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

General Chemistry

No analytical or quality issues were noted, other than those described 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 Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3-14D

Lab Sample ID: 480-132907-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.7		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.017		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.19	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	120		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.073		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.2	B	1.0	0.32	mg/L	1		6010C	SPLP East
Total Organic Carbon	7.8	B	1.0	0.36	mg/Kg	1		9060A	SPLP East

Client Sample ID: 1312-PC6-14D

Lab Sample ID: 480-132907-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.1		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0085	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.11	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	210		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	24		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.034		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.7	B	1.0	0.32	mg/L	1		6010C	SPLP East
Total Organic Carbon	6.8	B	1.0	0.36	mg/Kg	1		9060A	SPLP East

Client Sample ID: 1312-PC3FS1-14D

Lab Sample ID: 480-132907-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.60		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.014	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.15	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	120		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.96		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	16		2.0	1.0	mg/L	1		6010C	SPLP East
Sodium	3.7	B	1.0	0.32	mg/L	1		6010C	SPLP East
Total Organic Carbon	4.3	B	1.0	0.36	mg/Kg	1		9060A	SPLP East

Client Sample ID: 1312-CC3-14D

Lab Sample ID: 480-132907-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.1		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.026		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.27	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	83		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	8.3		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.083		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.5	B	1.0	0.32	mg/L	1		6010C	SPLP East
Total Organic Carbon	7.4	B	1.0	0.36	mg/Kg	1		9060A	SPLP East

Client Sample ID: 1312-PC3HLDM-14D

Lab Sample ID: 480-132907-5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3HLDM-14D (Continued)

Lab Sample ID: 480-132907-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0078	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Calcium	240		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	14		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.045		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	6.6	B	1.0	0.32	mg/L	1		6010C	SPLP East
Total Organic Carbon	11	B	1.0	0.36	mg/Kg	1		9060A	SPLP East

Client Sample ID: 1312-PC3-14D DUP

Lab Sample ID: 480-132907-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.7		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.016		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.19	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	120		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.071		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.1	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-14D DUP

Lab Sample ID: 480-132907-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0075	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.10	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	210		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	24		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.034		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.7	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-14D DUP

Lab Sample ID: 480-132907-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.60		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.013	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.15	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	120		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.98		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	17		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.0096	J	0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.8	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-14D DUP

Lab Sample ID: 480-132907-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.026		0.015	0.0056	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-CC3-14D DUP (Continued)

Lab Sample ID: 480-132907-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.26	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	83		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	8.3		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.082		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.4	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-14D DUP

Lab Sample ID: 480-132907-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0094	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Calcium	240		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.045		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	6.4	B	1.0	0.32	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3-14D

Lab Sample ID: 480-132907-1

Date Collected: 03/19/18 12:45

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.7		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 19:54	1
Arsenic	0.017		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 19:54	1
Boron	0.19	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:54	1
Calcium	120		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:54	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 19:54	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:54	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 19:54	1
Molybdenum	1.3		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 19:54	1
Potassium	13		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:54	1
Selenium	0.073		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 19:54	1
Sodium	3.2	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 19:54	1

General Chemistry - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7.8	B	1.0	0.36	mg/Kg			04/03/18 10:47	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC6-14D

Lab Sample ID: 480-132907-2

Date Collected: 03/19/18 12:50

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.1		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 19:58	1
Arsenic	0.0085	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 19:58	1
Boron	0.11	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:58	1
Calcium	210		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:58	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 19:58	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:58	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 19:58	1
Molybdenum	1.1		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 19:58	1
Potassium	24		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:58	1
Selenium	0.034		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 19:58	1
Sodium	4.7	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 19:58	1

General Chemistry - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6.8	B	1.0	0.36	mg/Kg			04/03/18 11:16	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3FS1-14D

Lab Sample ID: 480-132907-3

Date Collected: 03/19/18 12:55

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.60		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:02	1
Arsenic	0.014	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:02	1
Boron	0.15	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:02	1
Calcium	120		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:02	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:02	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:02	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:02	1
Molybdenum	0.96		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:02	1
Potassium	16		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:02	1
Selenium	ND		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:02	1
Sodium	3.7	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:02	1

General Chemistry - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.3	B	1.0	0.36	mg/Kg			04/03/18 11:43	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-CC3-14D

Lab Sample ID: 480-132907-4

Date Collected: 03/19/18 13:00

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.1		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:05	1
Arsenic	0.026		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:05	1
Boron	0.27	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:05	1
Calcium	83		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:05	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:05	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:05	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:05	1
Molybdenum	1.3		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:05	1
Potassium	8.3		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:05	1
Selenium	0.083		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:05	1
Sodium	3.5	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:05	1

General Chemistry - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7.4	B	1.0	0.36	mg/Kg			04/03/18 12:11	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3HLDM-14D

Lab Sample ID: 480-132907-5

Date Collected: 03/19/18 13:05

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.0		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:09	1
Arsenic	0.0078	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:09	1
Boron	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:09	1
Calcium	240		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:09	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:09	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:09	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:09	1
Molybdenum	1.1		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:09	1
Potassium	14		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:09	1
Selenium	0.045		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:09	1
Sodium	6.6	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:09	1

General Chemistry - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	11	B	1.0	0.36	mg/Kg			04/03/18 14:30	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3-14D DUP

Lab Sample ID: 480-132907-6

Date Collected: 03/19/18 12:45

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.7		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:13	1
Arsenic	0.016		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:13	1
Boron	0.19	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:13	1
Calcium	120		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:13	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:13	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:13	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:13	1
Molybdenum	1.3		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:13	1
Potassium	13		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:13	1
Selenium	0.071		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:13	1
Sodium	3.1	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:13	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC6-14D DUP

Lab Sample ID: 480-132907-7

Date Collected: 03/19/18 12:50

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.0		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:16	1
Arsenic	0.0075	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:16	1
Boron	0.10	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:16	1
Calcium	210		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:16	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:16	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:16	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:16	1
Molybdenum	1.1		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:16	1
Potassium	24		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:16	1
Selenium	0.034		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:16	1
Sodium	4.7	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:16	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3FS1-14D DUP

Lab Sample ID: 480-132907-8

Date Collected: 03/19/18 12:55

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.60		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:20	1
Arsenic	0.013	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:20	1
Boron	0.15	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:20	1
Calcium	120		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:20	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:20	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:20	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:20	1
Molybdenum	0.98		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:20	1
Potassium	17		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:20	1
Selenium	0.0096	J	0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:20	1
Sodium	3.8	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-CC3-14D DUP

Lab Sample ID: 480-132907-9

Date Collected: 03/19/18 13:00

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.0		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:38	1
Arsenic	0.026		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:38	1
Boron	0.26	J	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:38	1
Calcium	83		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:38	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:38	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:38	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:38	1
Molybdenum	1.3		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:38	1
Potassium	8.3		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:38	1
Selenium	0.082		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:38	1
Sodium	3.4	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:38	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Client Sample ID: 1312-PC3HLDM-14D DUP

Lab Sample ID: 480-132907-10

Date Collected: 03/19/18 13:05

Matrix: Solid

Date Received: 03/20/18 10:40

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.0		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 20:42	1
Arsenic	0.0094	J	0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 20:42	1
Boron	ND	F1	0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:42	1
Calcium	240		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:42	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 20:42	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 20:42	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 20:42	1
Molybdenum	1.1		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 20:42	1
Potassium	13		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 20:42	1
Selenium	0.045		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 20:42	1
Sodium	6.4	B	1.0	0.32	mg/L		03/29/18 10:00	03/30/18 20:42	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-406353/2-A
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 406353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 19:36	1
Arsenic	ND		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 19:36	1
Calcium	ND		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:36	1
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 19:36	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:36	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 19:36	1
Molybdenum	ND		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 19:36	1
Potassium	ND		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:36	1
Selenium	ND		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 19:36	1
Sodium	ND		1.0	0.32	mg/L		03/29/18 10:00	03/30/18 19:36	1

Lab Sample ID: MB 480-406353/2-A
Matrix: Solid
Analysis Batch: 406923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 406353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.50	0.10	mg/L		03/29/18 10:00	04/02/18 16:32	1

Lab Sample ID: LCS 480-406353/3-A
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 406353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10.0	9.79		mg/L		98	80 - 120
Arsenic	1.20	1.13		mg/L		94	80 - 120
Calcium	10.0	9.97		mg/L		100	80 - 120
Iron	10.0	9.20		mg/L		92	80 - 120
Magnesium	10.0	9.96		mg/L		100	80 - 120
Manganese	1.20	1.16		mg/L		96	80 - 120
Molybdenum	1.20	1.21		mg/L		101	80 - 120
Potassium	10.0	10.4		mg/L		104	80 - 120
Selenium	1.20	1.21		mg/L		101	80 - 120
Sodium	10.0	11.4		mg/L		114	80 - 120

Lab Sample ID: LCS 480-406353/3-A
Matrix: Solid
Analysis Batch: 406923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 406353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.200	0.203	J	mg/L		102	80 - 120

Lab Sample ID: LB 480-406167/1-B
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 406353

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		03/29/18 10:00	03/30/18 19:32	1
Arsenic	ND		0.015	0.0056	mg/L		03/29/18 10:00	03/30/18 19:32	1
Calcium	ND		3.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:32	1

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

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

Lab Sample ID: LB 480-406167/1-B
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 406353

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	ND		0.10	0.050	mg/L		03/29/18 10:00	03/30/18 19:32	1
Magnesium	ND		0.50	0.10	mg/L		03/29/18 10:00	03/30/18 19:32	1
Manganese	ND		0.010	0.0050	mg/L		03/29/18 10:00	03/30/18 19:32	1
Molybdenum	ND		0.010	0.0036	mg/L		03/29/18 10:00	03/30/18 19:32	1
Potassium	ND		2.0	1.0	mg/L		03/29/18 10:00	03/30/18 19:32	1
Selenium	ND		0.025	0.0087	mg/L		03/29/18 10:00	03/30/18 19:32	1
Sodium	1.93		1.0	0.32	mg/L		03/29/18 10:00	03/30/18 19:32	1

Lab Sample ID: LB 480-406167/1-B
Matrix: Solid
Analysis Batch: 406923

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 406353

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND		0.50	0.10	mg/L		03/29/18 10:00	04/02/18 16:28	1

Lab Sample ID: 480-132907-10 MS
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: 1312-PC3HLDM-14D DUP
Prep Type: SPLP East
Prep Batch: 406353

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Aluminum	2.0		10.0	11.5		mg/L		95	75 - 125
Arsenic	0.0094	J	1.20	1.12		mg/L		92	75 - 125
Boron	ND	F1	0.200	0.262	J F1	mg/L		131	75 - 125
Calcium	240		10.0	241	4	mg/L		60	75 - 125
Iron	ND		10.0	8.73		mg/L		87	75 - 125
Magnesium	ND		10.0	9.31		mg/L		93	75 - 125
Manganese	ND		1.20	1.09		mg/L		91	75 - 125
Molybdenum	1.1		1.20	2.27		mg/L		96	75 - 125
Potassium	13		10.0	23.1		mg/L		98	75 - 125
Selenium	0.045		1.20	1.22		mg/L		98	75 - 125
Sodium	6.4	B	10.0	15.6		mg/L		91	75 - 125

Lab Sample ID: 480-132907-10 MSD
Matrix: Solid
Analysis Batch: 406948

Client Sample ID: 1312-PC3HLDM-14D DUP
Prep Type: SPLP East
Prep Batch: 406353

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Aluminum	2.0		10.0	13.0		mg/L		110	75 - 125	12	20
Arsenic	0.0094	J	1.20	1.10		mg/L		91	75 - 125	2	20
Boron	ND	F1	0.200	0.260	J F1	mg/L		130	75 - 125	1	20
Calcium	240		10.0	236	4	mg/L		8	75 - 125	2	20
Iron	ND		10.0	8.53		mg/L		85	75 - 125	2	20
Magnesium	ND		10.0	9.10		mg/L		91	75 - 125	2	20
Manganese	ND		1.20	1.07		mg/L		89	75 - 125	2	20
Molybdenum	1.1		1.20	2.22		mg/L		92	75 - 125	2	20
Potassium	13		10.0	22.6		mg/L		93	75 - 125	2	20
Selenium	0.045		1.20	1.20		mg/L		96	75 - 125	2	20
Sodium	6.4	B	10.0	15.2		mg/L		88	75 - 125	2	20

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-407063/28
Matrix: Solid
Analysis Batch: 407063

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	0.448	J	1.0	0.36	mg/Kg	-		04/03/18 02:31	1

Lab Sample ID: MB 480-407063/52
Matrix: Solid
Analysis Batch: 407063

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	0.465	J	1.0	0.36	mg/Kg	-		04/03/18 13:34	1

Lab Sample ID: LCS 480-407063/29
Matrix: Solid
Analysis Batch: 407063

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	60.0	59.7		mg/Kg	-	100	90 - 110

Lab Sample ID: LCS 480-407063/53
Matrix: Solid
Analysis Batch: 407063

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	60.0	60.1		mg/Kg	-	100	90 - 110

Lab Sample ID: LB 480-406167/1-A
Matrix: Solid
Analysis Batch: 407063

Client Sample ID: Method Blank
Prep Type: SPLP East

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.36	mg/Kg	-		04/03/18 10:19	1

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Metals

Leach Batch: 406167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-132907-1	1312-PC3-14D	SPLP East	Solid	1312	
480-132907-2	1312-PC6-14D	SPLP East	Solid	1312	
480-132907-3	1312-PC3FS1-14D	SPLP East	Solid	1312	
480-132907-4	1312-CC3-14D	SPLP East	Solid	1312	
480-132907-5	1312-PC3HLDM-14D	SPLP East	Solid	1312	
480-132907-6	1312-PC3-14D DUP	SPLP East	Solid	1312	
480-132907-7	1312-PC6-14D DUP	SPLP East	Solid	1312	
480-132907-8	1312-PC3FS1-14D DUP	SPLP East	Solid	1312	
480-132907-9	1312-CC3-14D DUP	SPLP East	Solid	1312	
480-132907-10	1312-PC3HLDM-14D DUP	SPLP East	Solid	1312	
LB 480-406167/1-B	Method Blank	SPLP East	Solid	1312	
480-132907-10 MS	1312-PC3HLDM-14D DUP	SPLP East	Solid	1312	
480-132907-10 MSD	1312-PC3HLDM-14D DUP	SPLP East	Solid	1312	

Prep Batch: 406353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-132907-1	1312-PC3-14D	SPLP East	Solid	3010A	406167
480-132907-2	1312-PC6-14D	SPLP East	Solid	3010A	406167
480-132907-3	1312-PC3FS1-14D	SPLP East	Solid	3010A	406167
480-132907-4	1312-CC3-14D	SPLP East	Solid	3010A	406167
480-132907-5	1312-PC3HLDM-14D	SPLP East	Solid	3010A	406167
480-132907-6	1312-PC3-14D DUP	SPLP East	Solid	3010A	406167
480-132907-7	1312-PC6-14D DUP	SPLP East	Solid	3010A	406167
480-132907-8	1312-PC3FS1-14D DUP	SPLP East	Solid	3010A	406167
480-132907-9	1312-CC3-14D DUP	SPLP East	Solid	3010A	406167
480-132907-10	1312-PC3HLDM-14D DUP	SPLP East	Solid	3010A	406167
LB 480-406167/1-B	Method Blank	SPLP East	Solid	3010A	406167
MB 480-406353/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-406353/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-132907-10 MS	1312-PC3HLDM-14D DUP	SPLP East	Solid	3010A	406167
480-132907-10 MSD	1312-PC3HLDM-14D DUP	SPLP East	Solid	3010A	406167

Analysis Batch: 406923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 480-406167/1-B	Method Blank	SPLP East	Solid	6010C	406353
MB 480-406353/2-A	Method Blank	Total/NA	Solid	6010C	406353
LCS 480-406353/3-A	Lab Control Sample	Total/NA	Solid	6010C	406353

Analysis Batch: 406948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-132907-1	1312-PC3-14D	SPLP East	Solid	6010C	406353
480-132907-2	1312-PC6-14D	SPLP East	Solid	6010C	406353
480-132907-3	1312-PC3FS1-14D	SPLP East	Solid	6010C	406353
480-132907-4	1312-CC3-14D	SPLP East	Solid	6010C	406353
480-132907-5	1312-PC3HLDM-14D	SPLP East	Solid	6010C	406353
480-132907-6	1312-PC3-14D DUP	SPLP East	Solid	6010C	406353
480-132907-7	1312-PC6-14D DUP	SPLP East	Solid	6010C	406353
480-132907-8	1312-PC3FS1-14D DUP	SPLP East	Solid	6010C	406353
480-132907-9	1312-CC3-14D DUP	SPLP East	Solid	6010C	406353
480-132907-10	1312-PC3HLDM-14D DUP	SPLP East	Solid	6010C	406353
LB 480-406167/1-B	Method Blank	SPLP East	Solid	6010C	406353

TestAmerica Buffalo

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

Metals (Continued)

Analysis Batch: 406948 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-406353/2-A	Method Blank	Total/NA	Solid	6010C	406353
LCS 480-406353/3-A	Lab Control Sample	Total/NA	Solid	6010C	406353
480-132907-10 MS	1312-PC3HLDM-14D DUP	SPLP East	Solid	6010C	406353
480-132907-10 MSD	1312-PC3HLDM-14D DUP	SPLP East	Solid	6010C	406353

General Chemistry

Leach Batch: 406167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-132907-1	1312-PC3-14D	SPLP East	Solid	1312	
480-132907-2	1312-PC6-14D	SPLP East	Solid	1312	
480-132907-3	1312-PC3FS1-14D	SPLP East	Solid	1312	
480-132907-4	1312-CC3-14D	SPLP East	Solid	1312	
480-132907-5	1312-PC3HLDM-14D	SPLP East	Solid	1312	
LB 480-406167/1-A	Method Blank	SPLP East	Solid	1312	

Analysis Batch: 407063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-132907-1	1312-PC3-14D	SPLP East	Solid	9060A	406167
480-132907-2	1312-PC6-14D	SPLP East	Solid	9060A	406167
480-132907-3	1312-PC3FS1-14D	SPLP East	Solid	9060A	406167
480-132907-4	1312-CC3-14D	SPLP East	Solid	9060A	406167
480-132907-5	1312-PC3HLDM-14D	SPLP East	Solid	9060A	406167
LB 480-406167/1-A	Method Blank	SPLP East	Solid	9060A	406167
MB 480-407063/28	Method Blank	Total/NA	Solid	9060A	
MB 480-407063/52	Method Blank	Total/NA	Solid	9060A	
LCS 480-407063/29	Lab Control Sample	Total/NA	Solid	9060A	
LCS 480-407063/53	Lab Control Sample	Total/NA	Solid	9060A	

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-132907-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

480-132907 COC



DATE: 3/19/18

COC #: _____

PAGE: 1 OF 1

* 3007

Project Name: Bally Treatability Study		Project Contact: Denise King		Ball To: NSource		Disposal Instructions: LAB	
Project Number: 377082016		Phone Number: 978-352-5339				Shipment Method: FEDEX	
Project Manager: Russell Johnson		Project Phase: 2400				Waybill Number: N/A	

Sample Information							Methods for Analysis						RUSH			
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	NS/MSD	SPLP Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	SPLP Alkalinity	SPLP Chloride and Sulfate	SPLP TDS	SPLP Dissolved Organic Carbon	1 Week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD for Analysis
1	01069-001 (14 day)	3/19/18 1245	S	FS	N	X	X	X	X	X						
2	01069-002 (14 day)	↓ 1250				X	X	X	X	X						
3	01069-003 (14 day)	↓ 1255				X	X	X	X	X						
4	01069-004 (14 day)	↓ 1300				X	X	X	X	X						
5	01069-005 (14 day)	↓ 1305				X	X	X	X	X						
6																
7																
8																
9																
10																
11																
12																

Sampler's Signature: <i>Jenicia Bradley</i>	Date: 3/19/18	Time: 1352	For Lab Use		Comments: X-Analyze H-Hold Analysis Request Standard TAT Shipped from Kenyon - Atlanta GA *Please perform a lab duplicate analysis for each sample for SPLP metals only (not all other wet chem parameters). NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: <i>Jenicia Bradley</i>	Date: 3/19/18	Time: 0352	Does COC match samples:	Y or N	
Received By: <i>Say J</i>	Date: 3/19/18	Time: 13:52	Broken Container:	Y or N	
Relinquished By/Affiliation: <i>Say J</i>	Date: 3/19/18	Time: 13:52	COC seal intact:	Y or N	
Received By: <i>Say J</i>	Date: 3/19/18	Time: 13:52	Other problems:	Y or N	
			WSDOT contacted:	Y or N	
			Date contacted:		
			Cooler Temperature at receipt:	30 °C	
Relinquished By/Affiliation: _____	Date: _____	Time: _____	#1		
Received By (LAB): _____	Date: _____	Time: _____			



Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-132907-1

Login Number: 132907

List Source: TestAmerica Buffalo

List Number: 1

Creator: Kinecki, Kenneth P

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.	True	
Sampling Company provided.	True	AMEC F & W
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-133494-1

Client Project/Site: Bailly Treatability Study

For:

AMEC Foster Wheeler E & I, Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

4/17/2018 1:41:15 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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results through

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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.



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Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-133494-1	1312-PC3-28D	Solid	04/02/18 09:45	04/03/18 09:15
480-133494-2	1312-PC6-28D	Solid	04/02/18 09:50	04/03/18 09:15
480-133494-3	1312-PC3FS1-28D	Solid	04/02/18 09:55	04/03/18 09:15
480-133494-4	1312-CC3-28D	Solid	04/02/18 10:00	04/03/18 09:15
480-133494-5	1312-PC3HLDM-28D	Solid	04/02/18 10:05	04/03/18 09:15
480-133494-6	1312-PC3-28D-DUP	Solid	04/02/18 09:45	04/03/18 09:15
480-133494-7	1312-PC6-28D-DUP	Solid	04/02/18 09:50	04/03/18 09:15
480-133494-8	1312-PC3FS1-28D-DUP	Solid	04/02/18 09:55	04/03/18 09:15
480-133494-9	1312-CC3-28D-DUP	Solid	04/02/18 10:00	04/03/18 09:15
480-133494-10	1312-PC3HLDM-28D-DUP	Solid	04/02/18 10:05	04/03/18 09:15

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF

Protocol References:

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



Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
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.

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 Treatability Study

TestAmerica Job ID: 480-133494-1

Job ID: 480-133494-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-133494-1**

Comments

No additional comments.

Receipt

The samples were received on 4/3/2018 9:15 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.

Receipt Exceptions

Client changed all client ID's on 4/11/18: 1312-PC3-28D (480-133494-1), 1312-PC6-28D (480-133494-2), 1312-PC3FS1-28D (480-133494-3), 1312-CC3-28D (480-133494-4), 1312-PC3HLDM-28D (480-133494-5), 1312-PC3-28D-DUP (480-133494-6), 1312-PC6-28D-DUP (480-133494-7), 1312-PC3FS1-28D-DUP (480-133494-8), 1312-CC3-28D-DUP (480-133494-9) and 1312-PC3HLDM-28D-DUP (480-133494-10).

Metals

Method(s) 6010C: Sodium is elevated in the Leachate Blank 480-407369/1-B. Due to the possibility of Sodium being a trace element in the SPLP fluid, the data has been qualified and reported.

Method(s) 6010C: The % recovery of Post Spike, (480-133494-A-5-B PDS), in batch 480-407527 exhibited a result outside the quality control limits for Total Sodium. 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.

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 Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3-28D

Lab Sample ID: 480-133494-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	4.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.012	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.20	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	110		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.064		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	12		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	3.6	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-28D

Lab Sample ID: 480-133494-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.5		0.20	0.060	mg/L	1		6010C	SPLP East
Boron	0.17	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	130		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.035		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	20		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	5.0	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-28D

Lab Sample ID: 480-133494-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.70		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.013	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.15	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	85		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.012	J	0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	16		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.93		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	4.6	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-28D

Lab Sample ID: 480-133494-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.2		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.023		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.28	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	71		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.077		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	7.7		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	4.9	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-28D

Lab Sample ID: 480-133494-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.3		0.20	0.060	mg/L	1		6010C	SPLP East
Calcium	220		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.043		0.025	0.0087	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3HLDM-28D (Continued)

Lab Sample ID: 480-133494-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	14		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	8.0	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3-28D-DUP

Lab Sample ID: 480-133494-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.9		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.012	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.19	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	100		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.063		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	12		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	3.6	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-28D-DUP

Lab Sample ID: 480-133494-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.6		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0073	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.18	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	130		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.038		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	20		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.3		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	5.1	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-28D-DUP

Lab Sample ID: 480-133494-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.67		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.011	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.14	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	78		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.0091	J	0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	15		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.85		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	4.1	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-28D-DUP

Lab Sample ID: 480-133494-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.2		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.025		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.28	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	71		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.077		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	7.6		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-CC3-28D-DUP (Continued)

Lab Sample ID: 480-133494-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	4.9	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-28D-DUP

Lab Sample ID: 480-133494-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.1		0.20	0.060	mg/L	1		6010C	SPLP East
Calcium	200		3.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.040		0.025	0.0087	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Sodium	7.7	B	1.0	0.32	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3-28D

Lab Sample ID: 480-133494-1

Date Collected: 04/02/18 09:45

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4.0		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:16	1
Arsenic	0.012	J	0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:16	1
Boron	0.20	J	0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:16	1
Calcium	110		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:16	1
Selenium	0.064		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:16	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:16	1
Potassium	12		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:16	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:16	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:16	1
Molybdenum	1.3		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:16	1
Sodium	3.6	B	1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:16	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC6-28D

Lab Sample ID: 480-133494-2

Date Collected: 04/02/18 09:50

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.5		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:20	1
Arsenic	ND		0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:20	1
Boron	0.17	J	0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:20	1
Calcium	130		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:20	1
Selenium	0.035		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:20	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:20	1
Potassium	20		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:20	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:20	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:20	1
Molybdenum	1.3		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:20	1
Sodium	5.0	B	1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3FS1-28D

Lab Sample ID: 480-133494-3

Date Collected: 04/02/18 09:55

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.70		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:24	1
Arsenic	0.013	J	0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:24	1
Boron	0.15	J	0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:24	1
Calcium	85		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:24	1
Selenium	0.012	J	0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:24	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:24	1
Potassium	16		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:24	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:24	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:24	1
Molybdenum	0.93		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:24	1
Sodium	4.6	B	1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:24	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-CC3-28D

Lab Sample ID: 480-133494-4

Date Collected: 04/02/18 10:00

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.2		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:28	1
Arsenic	0.023		0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:28	1
Boron	0.28	J	0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:28	1
Calcium	71		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:28	1
Selenium	0.077		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:28	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:28	1
Potassium	7.7		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:28	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:28	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:28	1
Molybdenum	1.2		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:28	1
Sodium	4.9	B	1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:28	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3HLDM-28D

Lab Sample ID: 480-133494-5

Date Collected: 04/02/18 10:05

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.3		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:31	1
Arsenic	ND		0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:31	1
Boron	ND	F1	0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:31	1
Calcium	220		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:31	1
Selenium	0.043		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:31	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:31	1
Potassium	14		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:31	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:31	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:31	1
Molybdenum	1.2		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:31	1
Sodium	8.0	B	1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:31	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3-28D-DUP

Lab Sample ID: 480-133494-6

Date Collected: 04/02/18 09:45

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.9		0.20	0.060	mg/L		04/06/18 10:49	04/08/18 00:02	1
Arsenic	0.012	J	0.015	0.0056	mg/L		04/06/18 10:49	04/08/18 00:02	1
Boron	0.19	J	0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:02	1
Calcium	100		3.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:02	1
Selenium	0.063		0.025	0.0087	mg/L		04/06/18 10:49	04/08/18 00:02	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/08/18 00:02	1
Potassium	12		2.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:02	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:02	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/08/18 00:02	1
Molybdenum	1.3		0.010	0.0036	mg/L		04/06/18 10:49	04/08/18 00:02	1
Sodium	3.6	B	1.0	0.32	mg/L		04/06/18 10:49	04/08/18 00:02	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC6-28D-DUP

Lab Sample ID: 480-133494-7

Date Collected: 04/02/18 09:50

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.6		0.20	0.060	mg/L		04/06/18 10:49	04/08/18 00:05	1
Arsenic	0.0073	J	0.015	0.0056	mg/L		04/06/18 10:49	04/08/18 00:05	1
Boron	0.18	J	0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:05	1
Calcium	130		3.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:05	1
Selenium	0.038		0.025	0.0087	mg/L		04/06/18 10:49	04/08/18 00:05	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/08/18 00:05	1
Potassium	20		2.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:05	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:05	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/08/18 00:05	1
Molybdenum	1.3		0.010	0.0036	mg/L		04/06/18 10:49	04/08/18 00:05	1
Sodium	5.1	B	1.0	0.32	mg/L		04/06/18 10:49	04/08/18 00:05	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3FS1-28D-DUP

Lab Sample ID: 480-133494-8

Date Collected: 04/02/18 09:55

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.67		0.20	0.060	mg/L		04/06/18 10:49	04/08/18 00:09	1
Arsenic	0.011	J	0.015	0.0056	mg/L		04/06/18 10:49	04/08/18 00:09	1
Boron	0.14	J	0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:09	1
Calcium	78		3.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:09	1
Selenium	0.0091	J	0.025	0.0087	mg/L		04/06/18 10:49	04/08/18 00:09	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/08/18 00:09	1
Potassium	15		2.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:09	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:09	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/08/18 00:09	1
Molybdenum	0.85		0.010	0.0036	mg/L		04/06/18 10:49	04/08/18 00:09	1
Sodium	4.1	B	1.0	0.32	mg/L		04/06/18 10:49	04/08/18 00:09	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-CC3-28D-DUP

Lab Sample ID: 480-133494-9

Date Collected: 04/02/18 10:00

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.2		0.20	0.060	mg/L		04/06/18 10:49	04/08/18 00:13	1
Arsenic	0.025		0.015	0.0056	mg/L		04/06/18 10:49	04/08/18 00:13	1
Boron	0.28	J	0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:13	1
Calcium	71		3.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:13	1
Selenium	0.077		0.025	0.0087	mg/L		04/06/18 10:49	04/08/18 00:13	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/08/18 00:13	1
Potassium	7.6		2.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:13	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:13	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/08/18 00:13	1
Molybdenum	1.2		0.010	0.0036	mg/L		04/06/18 10:49	04/08/18 00:13	1
Sodium	4.9	B	1.0	0.32	mg/L		04/06/18 10:49	04/08/18 00:13	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Client Sample ID: 1312-PC3HLDM-28D-DUP

Lab Sample ID: 480-133494-10

Date Collected: 04/02/18 10:05

Matrix: Solid

Date Received: 04/03/18 09:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.1		0.20	0.060	mg/L		04/06/18 10:49	04/08/18 00:17	1
Arsenic	ND		0.015	0.0056	mg/L		04/06/18 10:49	04/08/18 00:17	1
Boron	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:17	1
Calcium	200		3.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:17	1
Selenium	0.040		0.025	0.0087	mg/L		04/06/18 10:49	04/08/18 00:17	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/08/18 00:17	1
Potassium	13		2.0	1.0	mg/L		04/06/18 10:49	04/08/18 00:17	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/08/18 00:17	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/08/18 00:17	1
Molybdenum	1.1		0.010	0.0036	mg/L		04/06/18 10:49	04/08/18 00:17	1
Sodium	7.7	B	1.0	0.32	mg/L		04/06/18 10:49	04/08/18 00:17	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-407527/2-A
Matrix: Solid
Analysis Batch: 407800

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 407527

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:09	1
Arsenic	ND		0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:09	1
Boron	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:09	1
Calcium	ND		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:09	1
Selenium	ND		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:09	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:09	1
Potassium	ND		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:09	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:09	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:09	1
Molybdenum	ND		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:09	1
Sodium	ND		1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:09	1

Lab Sample ID: LCS 480-407527/3-A
Matrix: Solid
Analysis Batch: 407800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 407527
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10.0	9.08		mg/L		91	80 - 120
Arsenic	1.20	1.08		mg/L		90	80 - 120
Boron	0.200	0.175	J	mg/L		88	80 - 120
Calcium	10.0	9.31		mg/L		93	80 - 120
Selenium	1.20	1.06		mg/L		88	80 - 120
Iron	10.0	9.14		mg/L		91	80 - 120
Potassium	10.0	9.27		mg/L		93	80 - 120
Magnesium	10.0	9.21		mg/L		92	80 - 120
Manganese	1.20	1.13		mg/L		94	80 - 120
Molybdenum	1.20	1.13		mg/L		94	80 - 120
Sodium	10.0	11.4		mg/L		114	80 - 120

Lab Sample ID: LB 480-407369/1-B
Matrix: Solid
Analysis Batch: 407800

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 407527

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		04/06/18 10:49	04/07/18 23:05	1
Arsenic	ND		0.015	0.0056	mg/L		04/06/18 10:49	04/07/18 23:05	1
Boron	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:05	1
Calcium	ND		3.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:05	1
Selenium	ND		0.025	0.0087	mg/L		04/06/18 10:49	04/07/18 23:05	1
Iron	ND		0.10	0.050	mg/L		04/06/18 10:49	04/07/18 23:05	1
Potassium	ND		2.0	1.0	mg/L		04/06/18 10:49	04/07/18 23:05	1
Magnesium	ND		0.50	0.10	mg/L		04/06/18 10:49	04/07/18 23:05	1
Manganese	ND		0.010	0.0050	mg/L		04/06/18 10:49	04/07/18 23:05	1
Molybdenum	ND		0.010	0.0036	mg/L		04/06/18 10:49	04/07/18 23:05	1
Sodium	2.24		1.0	0.32	mg/L		04/06/18 10:49	04/07/18 23:05	1

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

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

Lab Sample ID: 480-133494-5 MS

Matrix: Solid

Analysis Batch: 407800

Client Sample ID: 1312-PC3HLDM-28D

Prep Type: SPLP East

Prep Batch: 407527

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Aluminum	2.3		10.0	11.9		mg/L		97	75 - 125
Arsenic	ND		1.20	1.21		mg/L		101	75 - 125
Boron	ND	F1	0.200	0.265	J F1	mg/L		133	75 - 125
Calcium	220		10.0	216	4	mg/L		-16	75 - 125
Selenium	0.043		1.20	1.21		mg/L		98	75 - 125
Iron	ND		10.0	9.59		mg/L		96	75 - 125
Potassium	14		10.0	23.0		mg/L		92	75 - 125
Magnesium	ND		10.0	9.72		mg/L		97	75 - 125
Manganese	ND		1.20	1.19		mg/L		99	75 - 125
Molybdenum	1.2		1.20	2.34		mg/L		96	75 - 125
Sodium	8.0	B	10.0	17.6		mg/L		95	75 - 125

Lab Sample ID: 480-133494-5 MSD

Matrix: Solid

Analysis Batch: 407800

Client Sample ID: 1312-PC3HLDM-28D

Prep Type: SPLP East

Prep Batch: 407527

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier					RPD	Limit
Aluminum	2.3		10.0	11.2		mg/L		90	75 - 125	6	20
Arsenic	ND		1.20	1.16		mg/L		97	75 - 125	5	20
Boron	ND	F1	0.200	0.251	J F1	mg/L		126	75 - 125	5	20
Calcium	220		10.0	203	4	mg/L		-152	75 - 125	6	20
Selenium	0.043		1.20	1.15		mg/L		92	75 - 125	5	20
Iron	ND		10.0	9.06		mg/L		91	75 - 125	6	20
Potassium	14		10.0	21.6		mg/L		79	75 - 125	6	20
Magnesium	ND		10.0	9.24		mg/L		92	75 - 125	5	20
Manganese	ND		1.20	1.13		mg/L		94	75 - 125	5	20
Molybdenum	1.2		1.20	2.22		mg/L		86	75 - 125	5	20
Sodium	8.0	B	10.0	16.7		mg/L		87	75 - 125	5	20

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

Metals

Leach Batch: 407369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133494-1	1312-PC3-28D	SPLP East	Solid	1312	
480-133494-2	1312-PC6-28D	SPLP East	Solid	1312	
480-133494-3	1312-PC3FS1-28D	SPLP East	Solid	1312	
480-133494-4	1312-CC3-28D	SPLP East	Solid	1312	
480-133494-5	1312-PC3HLDM-28D	SPLP East	Solid	1312	
480-133494-6	1312-PC3-28D-DUP	SPLP East	Solid	1312	
480-133494-7	1312-PC6-28D-DUP	SPLP East	Solid	1312	
480-133494-8	1312-PC3FS1-28D-DUP	SPLP East	Solid	1312	
480-133494-9	1312-CC3-28D-DUP	SPLP East	Solid	1312	
480-133494-10	1312-PC3HLDM-28D-DUP	SPLP East	Solid	1312	
LB 480-407369/1-B	Method Blank	SPLP East	Solid	1312	
480-133494-5 MS	1312-PC3HLDM-28D	SPLP East	Solid	1312	
480-133494-5 MSD	1312-PC3HLDM-28D	SPLP East	Solid	1312	

Prep Batch: 407527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133494-1	1312-PC3-28D	SPLP East	Solid	3010A	407369
480-133494-2	1312-PC6-28D	SPLP East	Solid	3010A	407369
480-133494-3	1312-PC3FS1-28D	SPLP East	Solid	3010A	407369
480-133494-4	1312-CC3-28D	SPLP East	Solid	3010A	407369
480-133494-5	1312-PC3HLDM-28D	SPLP East	Solid	3010A	407369
480-133494-6	1312-PC3-28D-DUP	SPLP East	Solid	3010A	407369
480-133494-7	1312-PC6-28D-DUP	SPLP East	Solid	3010A	407369
480-133494-8	1312-PC3FS1-28D-DUP	SPLP East	Solid	3010A	407369
480-133494-9	1312-CC3-28D-DUP	SPLP East	Solid	3010A	407369
480-133494-10	1312-PC3HLDM-28D-DUP	SPLP East	Solid	3010A	407369
LB 480-407369/1-B	Method Blank	SPLP East	Solid	3010A	407369
MB 480-407527/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-407527/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-133494-5 MS	1312-PC3HLDM-28D	SPLP East	Solid	3010A	407369
480-133494-5 MSD	1312-PC3HLDM-28D	SPLP East	Solid	3010A	407369

Analysis Batch: 407800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133494-1	1312-PC3-28D	SPLP East	Solid	6010C	407527
480-133494-2	1312-PC6-28D	SPLP East	Solid	6010C	407527
480-133494-3	1312-PC3FS1-28D	SPLP East	Solid	6010C	407527
480-133494-4	1312-CC3-28D	SPLP East	Solid	6010C	407527
480-133494-5	1312-PC3HLDM-28D	SPLP East	Solid	6010C	407527
480-133494-6	1312-PC3-28D-DUP	SPLP East	Solid	6010C	407527
480-133494-7	1312-PC6-28D-DUP	SPLP East	Solid	6010C	407527
480-133494-8	1312-PC3FS1-28D-DUP	SPLP East	Solid	6010C	407527
480-133494-9	1312-CC3-28D-DUP	SPLP East	Solid	6010C	407527
480-133494-10	1312-PC3HLDM-28D-DUP	SPLP East	Solid	6010C	407527
LB 480-407369/1-B	Method Blank	SPLP East	Solid	6010C	407527
MB 480-407527/2-A	Method Blank	Total/NA	Solid	6010C	407527
LCS 480-407527/3-A	Lab Control Sample	Total/NA	Solid	6010C	407527
480-133494-5 MS	1312-PC3HLDM-28D	SPLP East	Solid	6010C	407527
480-133494-5 MSD	1312-PC3HLDM-28D	SPLP East	Solid	6010C	407527

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133494-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: 4/21



COC #: _____

PAGE: 1 OF 480-133494 COC

Project Name:	Bailey Treatability Study	Project Contact:	Denise King	Bill To:	NiSource	Disposal Instructions:	LAB
Project Number:	377882016	Phone Number:	978-392-5339			Shipment Method:	FEDEX
Project Manager:	Russell Johnson	Project Phase:	2400			Waybill Number:	N/A

Sample Information							Methods for Analysis				RUSH	
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	*SPLP Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	01069-001 (28 day)	4/2/18 945	S	FS	N	X				X		
2	01069-002 (28 day)	4/2/18 950				X				X		
3	01069-003 (28 day)	4/2/18 955	↓	↓	↓	X				X		
4	01069-004 (28 day)	4/2/18 1000	↓	↓	↓	X				X		
5	01069-005 (28 day)	4/2/18 1005	↓	↓	↓	X				X		
6												
7												
8												
9												
10												
11												
12												

Sampler's Signature:	<i>Jamacia Bradley</i>	Date:	4/2/18	Time:	1007	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT - Need results by 4/16/2018 Shipped from Kemron - Atlanta GA *Please perform a lab duplicate analysis for each sample for SPLP metals only (not all other wet chem parameters). NUMBER OF COOLERS SENT:
Relinquished By/Affiliation:	<i>Jamacia Bradley</i>	Date:	4/2/18	Time:	1403	Does COC match samples:	Y or N	
Received By:	<i>[Signature]</i>	Date:	4-2-18	Time:	1403	Broken Container:	Y or N	
Relinquished By/Affiliation:	<i>[Signature]</i>	Date:	4-2-18	Time:	1453	COC seal intact:	Y or N	
Received By:	<i>[Signature]</i>	Date:	4/2/18	Time:	0915	Other problems:	Y or N	
Relinquished By/Affiliation:	<i>[Signature]</i>	Date:	4/2/18	Time:	0915	WSDOT contacted:	Y or N	
Received By (LAB):		Date:		Time:		Date contacted:		
						Cooler Temperature at receipt:	3.1 °C	
						#1		



Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-133494-1

Login Number: 133494

List Source: TestAmerica Buffalo

List Number: 1

Creator: Harper, Marcus D

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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



Reviewed 04/27/2018
Elizabeth Penta
Wood. PLC

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: 480-133622-1

Client Project/Site: Bailly Treatability Study
Revision: 1

For:

Wood Environment & Infrastructure
271 Mill Road
Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:
4/26/2018 5:37:33 PM

Rebecca Jones, Project Management Assistant I
rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

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results through
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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.

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Sample Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-133622-1	1315-PC3-02H	Water	04/02/18 12:00	04/05/18 09:30
480-133622-2	1315-PC6-02H	Water	04/02/18 12:10	04/05/18 09:30
480-133622-3	1315-PC3FS1-02H	Water	04/02/18 12:20	04/05/18 09:30
480-133622-4	1315-CC3-02H	Water	04/02/18 12:30	04/05/18 09:30
480-133622-5	1315-PC3HLDM-02H	Water	04/02/18 12:40	04/05/18 09:30
480-133622-6	1315-BLANK-02H	Water	04/02/18 12:50	04/05/18 09:30
480-133622-7	1315-PC3-01D	Water	04/03/18 10:00	04/05/18 09:30
480-133622-8	1315-PC6-01D	Water	04/03/18 10:10	04/05/18 09:30
480-133622-9	1315-PC3FS1-01D	Water	04/03/18 10:20	04/05/18 09:30
480-133622-10	1315-CC3-01D	Water	04/03/18 10:30	04/05/18 09:30
480-133622-11	1315-PC3HLDM-01D	Water	04/03/18 10:40	04/05/18 09:30
480-133622-12	1315-BLANK-01D	Water	04/03/18 10:50	04/05/18 09:30
480-133622-13	1315-PC3-02D	Water	04/04/18 10:30	04/05/18 09:30
480-133622-14	1315-PC6-02D	Water	04/04/18 10:40	04/05/18 09:30
480-133622-15	1315-PC3FS1-02D	Water	04/04/18 10:50	04/05/18 09:30
480-133622-16	1315-CC3-02D	Water	04/04/18 11:00	04/05/18 09:30
480-133622-17	1315-PC3HLDM-02D	Water	04/04/18 11:10	04/05/18 09:30
480-133622-18	1315-BLANK-02D	Water	04/04/18 11:20	04/05/18 09:30

Method Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

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: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Job ID: 480-133622-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-133622-1

Revision

This report has been revised to correct the sample results for 1315-BLANK-01D (480-133622-12) and 1315-PC3FS1-02D (480-133622-15).

Receipt

The samples were received on 4/5/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

Receipt Exceptions

By request on 4/11/2108, all client ID's were changed: 1315-PC3-02H (480-133622-1), 1315-PC6-02H (480-133622-2), 1315-PC3FS1-02H (480-133622-3), 1315-CC3-02H (480-133622-4), 1315-PC3HLDM-02H (480-133622-5), 1315-BLANK-02H (480-133622-6), 1315-PC3-01D (480-133622-7), 1315-PC6-01D (480-133622-8), 1315-PC3FS1-01D (480-133622-9), 1315-CC3-01D (480-133622-10), 1315-PC3HLDM-01D (480-133622-11), 1315-BLANK-01D (480-133622-12), 1315-PC3-02D (480-133622-13), 1315-PC6-02D (480-133622-14), 1315-PC3FS1-02D (480-133622-15), 1315-CC3-02D (480-133622-16), 1315-PC3HLDM-02D (480-133622-17) and 1315-BLANK-02D (480-133622-18).

HPLC/IC

Method(s) 9056A: The following samples were reported with elevated reporting limits for all analytes: 1315-PC3-01D (480-133622-7), 1315-PC6-01D (480-133622-8), 1315-CC3-01D (480-133622-10), 1315-PC3HLDM-01D (480-133622-11) and 1315-BLANK-01D (480-133622-12). The sample was analyzed at a dilution based on screening results.

Method(s) 9056A: The following samples were reported with elevated reporting limits for all analytes: 1315-PC6-02D (480-133622-14) and 1315-PC3HLDM-02D (480-133622-17). The sample was analyzed at a dilution based on screening results.

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

Metals

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

General Chemistry

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

Detection Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3-02H

Lab Sample ID: 480-133622-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.24		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.012	J	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	6.3		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.063		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.2		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.2		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	0.44	J	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	1.5	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	36		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	70		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-02H

Lab Sample ID: 480-133622-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.20		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.0069	J	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	10		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.036		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	15		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.0		1.0	0.32	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	1.2	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	55		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	97		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-02H

Lab Sample ID: 480-133622-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.12	J	0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.016	J	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	10		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.15		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.7		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.41	J	0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	21		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	1.3	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	25		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	110		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-02H

Lab Sample ID: 480-133622-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.49		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.020		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	9.3		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	6.1		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.6		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	5.2		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	0.85	J	2.0	0.35	mg/L	1		9056A	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-CC3-02H (Continued)

Lab Sample ID: 480-133622-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	2.0	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	33		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	87		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-02H

Lab Sample ID: 480-133622-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.14	J	0.20	0.060	mg/L	1		6010C	Dissolved
Calcium, Dissolved	23		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.052		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	10		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.2		1.0	0.32	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	87		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-02H

Lab Sample ID: 480-133622-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity, Dissolved	2.7	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	42		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3-01D

Lab Sample ID: 480-133622-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.2		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.055		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	37		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.27		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	19		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.3		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	1.6	J	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.6	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	140		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-01D

Lab Sample ID: 480-133622-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.1		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.040		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	54		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.16		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	33		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	4.2		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	1.2	J	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.5	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	200		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	220	B	10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3FS1-01D

Lab Sample ID: 480-133622-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.33		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0099	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.057		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	38		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.38		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	23		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.3		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.84		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	62		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	82		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	200	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-01D

Lab Sample ID: 480-133622-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.7		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0097	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.073		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	37		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.53		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	13		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.3		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	13		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	4.0		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	5.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	110		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	150	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-01D

Lab Sample ID: 480-133622-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.81		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.023		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	90		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0034		0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.19		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	22		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.7		1.0	0.32	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.1	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	260		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	280	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-01D

Lab Sample ID: 480-133622-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity, Dissolved	1.2	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved

Client Sample ID: 1315-PC3-02D

Lab Sample ID: 480-133622-13

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3-02D (Continued)

Lab Sample ID: 480-133622-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.99		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0080	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.045		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	29		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.15		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.2		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.7		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	0.49	J	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	91		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	100		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-02D

Lab Sample ID: 480-133622-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.0		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.035		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	41		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.093		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	16		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.0		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	0.74	J	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	120		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	120		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-02D

Lab Sample ID: 480-133622-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.35		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0072	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.046		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	27		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.18		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	12		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.6		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	34		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	1.6		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	65		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	140	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-02D

Lab Sample ID: 480-133622-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.3		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0094	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.062		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	28		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.31		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	6.6		0.50	0.10	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-CC3-02D (Continued)

Lab Sample ID: 480-133622-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium, Dissolved	1.6		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	5.4		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	1.5	J	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	3.0		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	74		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	81		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-02D

Lab Sample ID: 480-133622-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.0		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.025		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	74		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.13		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	13		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.6		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	2.3	J	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	2.6		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	190		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	180		20	8.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-02D

Lab Sample ID: 480-133622-18

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3-02H

Lab Sample ID: 480-133622-1

Date Collected: 04/02/18 12:00

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.24		0.20	0.060	mg/L		04/06/18 08:56	04/06/18 15:13	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/06/18 15:13	1
Boron, Dissolved	0.012	J	0.020	0.0040	mg/L		04/06/18 08:56	04/06/18 15:13	1
Calcium, Dissolved	6.3		0.50	0.10	mg/L		04/06/18 08:56	04/06/18 15:13	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/06/18 15:13	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/06/18 15:13	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/06/18 15:13	1
Molybdenum, Dissolved	0.063		0.010	0.0036	mg/L		04/06/18 08:56	04/06/18 15:13	1
Potassium, Dissolved	9.2		0.50	0.10	mg/L		04/06/18 08:56	04/06/18 15:13	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/06/18 15:13	1
Sodium, Dissolved	1.2		1.0	0.32	mg/L		04/06/18 08:56	04/06/18 15:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 19:52	1
Sulfate, Dissolved	0.44	J	2.0	0.35	mg/L			04/06/18 19:52	1
Dissolved Organic Carbon	1.5	B	1.0	0.43	mg/L			04/06/18 22:49	1
Alkalinity, Dissolved	36		5.0	0.79	mg/L			04/06/18 20:38	1
Total Dissolved Solids	70		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC6-02H

Lab Sample ID: 480-133622-2

Date Collected: 04/02/18 12:10

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.20		0.20	0.060	mg/L		04/06/18 08:56	04/12/18 14:08	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 14:45	1
Boron, Dissolved	0.0069	J	0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 14:45	1
Calcium, Dissolved	10		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 14:45	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 14:45	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 14:45	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 14:45	1
Molybdenum, Dissolved	0.036		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 14:45	1
Potassium, Dissolved	15		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 14:45	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 14:45	1
Sodium, Dissolved	2.0		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 14:45	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 20:07	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 20:07	1
Dissolved Organic Carbon	1.2	B	1.0	0.43	mg/L			04/06/18 23:45	1
Alkalinity, Dissolved	55		5.0	0.79	mg/L			04/06/18 20:46	1
Total Dissolved Solids	97		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3FS1-02H

Lab Sample ID: 480-133622-3

Date Collected: 04/02/18 12:20

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.12	J	0.20	0.060	mg/L		04/06/18 08:56	04/12/18 14:18	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:03	1
Boron, Dissolved	0.016	J	0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:03	1
Calcium, Dissolved	10		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:03	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:03	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:03	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:03	1
Molybdenum, Dissolved	0.15		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:03	1
Potassium, Dissolved	9.7		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:03	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:03	1
Sodium, Dissolved	1.4		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.41	J	0.50	0.28	mg/L			04/06/18 20:21	1
Sulfate, Dissolved	21		2.0	0.35	mg/L			04/06/18 20:21	1
Dissolved Organic Carbon	1.3	B	1.0	0.43	mg/L			04/07/18 00:41	1
Alkalinity, Dissolved	25		5.0	0.79	mg/L			04/07/18 00:05	1
Total Dissolved Solids	110		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-CC3-02H

Lab Sample ID: 480-133622-4

Date Collected: 04/02/18 12:30

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.49		0.20	0.060	mg/L		04/06/18 08:56	04/12/18 14:29	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:06	1
Boron, Dissolved	0.020		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:06	1
Calcium, Dissolved	9.3		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:06	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:06	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:06	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:06	1
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:06	1
Potassium, Dissolved	6.1		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:06	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:06	1
Sodium, Dissolved	1.6		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:06	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	5.2		0.50	0.28	mg/L			04/06/18 21:34	1
Sulfate, Dissolved	0.85	J	2.0	0.35	mg/L			04/06/18 21:34	1
Dissolved Organic Carbon	2.0	B	1.0	0.43	mg/L			04/07/18 01:08	1
Alkalinity, Dissolved	33		5.0	0.79	mg/L			04/06/18 23:58	1
Total Dissolved Solids	87		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3HLDM-02H

Lab Sample ID: 480-133622-5

Date Collected: 04/02/18 12:40

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.14	J	0.20	0.060	mg/L		04/06/18 08:56	04/12/18 14:33	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:10	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:10	1
Calcium, Dissolved	23		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:10	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:10	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:10	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:10	1
Molybdenum, Dissolved	0.052		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:10	1
Potassium, Dissolved	10		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:10	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:10	1
Sodium, Dissolved	1.2		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 21:49	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 21:49	1
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L			04/07/18 01:36	1
Alkalinity, Dissolved	87		5.0	0.79	mg/L			04/06/18 23:49	1
Total Dissolved Solids	130		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-BLANK-02H

Lab Sample ID: 480-133622-6

Date Collected: 04/02/18 12:50

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/06/18 08:56	04/12/18 14:37	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:14	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:14	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:14	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:14	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:14	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:14	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:14	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:14	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:14	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:14	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 22:03	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 22:03	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/07/18 02:04	1
Alkalinity, Dissolved	2.7	J	5.0	0.79	mg/L			04/06/18 23:41	1
Total Dissolved Solids	42		10	4.0	mg/L			04/09/18 06:57	1

Client Sample Results

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3-01D

Lab Sample ID: 480-133622-7

Date Collected: 04/03/18 10:00

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.2		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:09	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:28	1
Boron, Dissolved	0.055		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:28	1
Calcium, Dissolved	37		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:28	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:28	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:28	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:28	1
Molybdenum, Dissolved	0.27		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:28	1
Potassium, Dissolved	19		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:28	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:28	1
Sodium, Dissolved	2.3		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:28	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/06/18 22:18	2
Sulfate, Dissolved	1.6	J	4.0	0.70	mg/L			04/06/18 22:18	2
Dissolved Organic Carbon	4.6	B	1.0	0.43	mg/L			04/07/18 02:32	1
Alkalinity, Dissolved	140		5.0	0.79	mg/L			04/06/18 23:34	1
Total Dissolved Solids	130	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC6-01D

Lab Sample ID: 480-133622-8

Date Collected: 04/03/18 10:10

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.1		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:13	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:32	1
Boron, Dissolved	0.040		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:32	1
Calcium, Dissolved	54		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:32	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:32	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:32	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:32	1
Molybdenum, Dissolved	0.16		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:32	1
Potassium, Dissolved	33		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:32	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:32	1
Sodium, Dissolved	4.2		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/06/18 22:33	2
Sulfate, Dissolved	1.2	J	4.0	0.70	mg/L			04/06/18 22:33	2
Dissolved Organic Carbon	4.5	B	1.0	0.43	mg/L			04/07/18 03:00	1
Alkalinity, Dissolved	200		5.0	0.79	mg/L			04/06/18 23:25	1
Total Dissolved Solids	220	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3FS1-01D

Lab Sample ID: 480-133622-9

Date Collected: 04/03/18 10:20

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.33		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:16	1
Arsenic, Dissolved	0.0099	J	0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:36	1
Boron, Dissolved	0.057		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:36	1
Calcium, Dissolved	38		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:36	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:36	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:36	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:36	1
Molybdenum, Dissolved	0.38		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:36	1
Potassium, Dissolved	23		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:36	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:36	1
Sodium, Dissolved	3.3		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:36	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.84		0.50	0.28	mg/L			04/06/18 22:47	1
Sulfate, Dissolved	62		2.0	0.35	mg/L			04/06/18 22:47	1
Dissolved Organic Carbon	2.8	B	1.0	0.43	mg/L			04/07/18 05:19	1
Alkalinity, Dissolved	82		5.0	0.79	mg/L			04/06/18 23:02	1
Total Dissolved Solids	200	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-CC3-01D

Lab Sample ID: 480-133622-10

Date Collected: 04/03/18 10:30

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.7		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:32	1
Arsenic, Dissolved	0.0097	J	0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:40	1
Boron, Dissolved	0.073		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:40	1
Calcium, Dissolved	37		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:40	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:40	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:40	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:40	1
Molybdenum, Dissolved	0.53		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:40	1
Potassium, Dissolved	13		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:40	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:40	1
Sodium, Dissolved	3.3		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	13		1.0	0.56	mg/L			04/06/18 23:02	2
Sulfate, Dissolved	4.0		4.0	0.70	mg/L			04/06/18 23:02	2
Dissolved Organic Carbon	5.8	B	1.0	0.43	mg/L			04/07/18 05:47	1
Alkalinity, Dissolved	110		5.0	0.79	mg/L			04/06/18 22:54	1
Total Dissolved Solids	150	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3HLDM-01D

Lab Sample ID: 480-133622-11

Date Collected: 04/03/18 10:40

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.81		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:35	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:43	1
Boron, Dissolved	0.023		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:43	1
Calcium, Dissolved	90		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:43	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:43	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:43	1
Manganese, Dissolved	0.0034		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:43	1
Molybdenum, Dissolved	0.19		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:43	1
Potassium, Dissolved	22		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:43	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:43	1
Sodium, Dissolved	2.7		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:43	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			04/06/18 23:16	5
Sulfate, Dissolved	ND		10	1.7	mg/L			04/06/18 23:16	5
Dissolved Organic Carbon	5.1	B	1.0	0.43	mg/L			04/07/18 06:43	1
Alkalinity, Dissolved	260		5.0	0.79	mg/L			04/06/18 22:46	1
Total Dissolved Solids	280	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-BLANK-01D

Lab Sample ID: 480-133622-12

Date Collected: 04/03/18 10:50

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:51	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:58	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:58	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:58	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:58	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:58	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:58	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:58	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:58	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:58	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:58	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 13:46	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 13:46	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/07/18 07:38	1
Alkalinity, Dissolved	1.2	J	5.0	0.79	mg/L			04/06/18 22:12	1
Total Dissolved Solids	ND		10	4.0	mg/L			04/09/18 20:58	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3-02D

Lab Sample ID: 480-133622-13

Date Collected: 04/04/18 10:30

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.99		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:43	1
Arsenic, Dissolved	0.0080	J	0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:51	1
Boron, Dissolved	0.045		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:51	1
Calcium, Dissolved	29		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:51	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:51	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:51	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:51	1
Molybdenum, Dissolved	0.15		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:51	1
Potassium, Dissolved	9.2		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:51	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:51	1
Sodium, Dissolved	1.7		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:51	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 13:30	1
Sulfate, Dissolved	0.49	J	2.0	0.35	mg/L			04/06/18 13:30	1
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L			04/07/18 08:06	1
Alkalinity, Dissolved	91		5.0	0.79	mg/L			04/06/18 22:28	1
Total Dissolved Solids	100		10	4.0	mg/L			04/09/18 20:58	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC6-02D

Lab Sample ID: 480-133622-14

Date Collected: 04/04/18 10:40

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.0		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:47	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:54	1
Boron, Dissolved	0.035		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:54	1
Calcium, Dissolved	41		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:54	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:54	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:54	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:54	1
Molybdenum, Dissolved	0.093		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:54	1
Potassium, Dissolved	16		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:54	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:54	1
Sodium, Dissolved	2.0		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:54	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/06/18 13:38	2
Sulfate, Dissolved	0.74	J	4.0	0.70	mg/L			04/06/18 13:38	2
Dissolved Organic Carbon	1.8	B	1.0	0.43	mg/L			04/07/18 08:34	1
Alkalinity, Dissolved	120		5.0	0.79	mg/L			04/06/18 22:20	1
Total Dissolved Solids	120		10	4.0	mg/L			04/09/18 20:58	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3FS1-02D

Lab Sample ID: 480-133622-15

Date Collected: 04/04/18 10:50

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.35		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:39	1
Arsenic, Dissolved	0.0072	J	0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 15:47	1
Boron, Dissolved	0.046		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 15:47	1
Calcium, Dissolved	27		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:47	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 15:47	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 15:47	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 15:47	1
Molybdenum, Dissolved	0.18		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 15:47	1
Potassium, Dissolved	12		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 15:47	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 15:47	1
Sodium, Dissolved	1.6		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 15:47	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/06/18 23:31	2
Sulfate, Dissolved	34		4.0	0.70	mg/L			04/06/18 23:31	2
Dissolved Organic Carbon	1.6		1.0	0.43	mg/L			04/11/18 20:53	1
Alkalinity, Dissolved	65		5.0	0.79	mg/L			04/06/18 22:36	1
Total Dissolved Solids	140	B	10	4.0	mg/L			04/09/18 19:12	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-CC3-02D

Lab Sample ID: 480-133622-16

Date Collected: 04/04/18 11:00

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.3		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:55	1
Arsenic, Dissolved	0.0094	J	0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 16:13	1
Boron, Dissolved	0.062		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 16:13	1
Calcium, Dissolved	28		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:13	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 16:13	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 16:13	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 16:13	1
Molybdenum, Dissolved	0.31		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 16:13	1
Potassium, Dissolved	6.6		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:13	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 16:13	1
Sodium, Dissolved	1.6		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 16:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	5.4		0.50	0.28	mg/L			04/06/18 13:54	1
Sulfate, Dissolved	1.5	J	2.0	0.35	mg/L			04/06/18 13:54	1
Dissolved Organic Carbon	3.0		1.0	0.43	mg/L			04/11/18 21:21	1
Alkalinity, Dissolved	74		5.0	0.79	mg/L			04/06/18 22:05	1
Total Dissolved Solids	81		10	4.0	mg/L			04/09/18 20:58	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-PC3HLDM-02D

Lab Sample ID: 480-133622-17

Date Collected: 04/04/18 11:10

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.0		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 17:58	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 16:16	1
Boron, Dissolved	0.025		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 16:16	1
Calcium, Dissolved	74		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:16	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 16:16	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 16:16	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 16:16	1
Molybdenum, Dissolved	0.13		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 16:16	1
Potassium, Dissolved	13		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:16	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 16:16	1
Sodium, Dissolved	1.6		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 16:16	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/06/18 14:02	2
Sulfate, Dissolved	2.3	J	4.0	0.70	mg/L			04/06/18 14:02	2
Dissolved Organic Carbon	2.6		1.0	0.43	mg/L			04/11/18 21:49	1
Alkalinity, Dissolved	190		5.0	0.79	mg/L			04/06/18 21:22	1
Total Dissolved Solids	180		20	8.0	mg/L			04/09/18 20:58	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Client Sample ID: 1315-BLANK-02D

Lab Sample ID: 480-133622-18

Date Collected: 04/04/18 11:20

Matrix: Water

Date Received: 04/05/18 09:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/06/18 08:56	04/09/18 18:02	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/07/18 16:20	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/06/18 08:56	04/07/18 16:20	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:20	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/07/18 16:20	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/07/18 16:20	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/07/18 16:20	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/06/18 08:56	04/07/18 16:20	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/07/18 16:20	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/07/18 16:20	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/06/18 08:56	04/07/18 16:20	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 14:10	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 14:10	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/11/18 22:17	1
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/06/18 21:04	1
Total Dissolved Solids	ND		10	4.0	mg/L			04/09/18 20:58	1

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-407413/1-A
Matrix: Water
Analysis Batch: 408521

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 407413

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/06/18 08:56	04/06/18 15:06	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/06/18 08:56	04/06/18 15:06	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/06/18 08:56	04/06/18 15:06	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/06/18 15:06	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/06/18 08:56	04/06/18 15:06	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/06/18 08:56	04/06/18 15:06	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/06/18 08:56	04/06/18 15:06	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/06/18 08:56	04/06/18 15:06	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/06/18 08:56	04/06/18 15:06	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/06/18 08:56	04/06/18 15:06	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/06/18 08:56	04/06/18 15:06	1

Lab Sample ID: LCS 480-407413/2-A
Matrix: Water
Analysis Batch: 408521

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 407413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	9.68		mg/L		97	80 - 120
Arsenic, Dissolved	0.200	0.204		mg/L		102	80 - 120
Boron, Dissolved	0.200	0.187		mg/L		93	80 - 120
Calcium, Dissolved	10.0	9.55		mg/L		95	80 - 120
Iron, Dissolved	10.0	9.43		mg/L		94	80 - 120
Magnesium, Dissolved	10.0	10.1		mg/L		101	80 - 120
Manganese, Dissolved	0.200	0.202		mg/L		101	80 - 120
Molybdenum, Dissolved	0.200	0.189		mg/L		94	80 - 120
Potassium, Dissolved	10.0	9.80		mg/L		98	80 - 120
Selenium, Dissolved	0.200	0.192		mg/L		96	80 - 120
Sodium, Dissolved	10.0	9.72		mg/L		97	80 - 120

Lab Sample ID: 480-133622-2 MS
Matrix: Water
Analysis Batch: 407980

Client Sample ID: 1315-PC6-02H
Prep Type: Dissolved
Prep Batch: 407413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic, Dissolved	ND		0.200	0.206		mg/L		103	75 - 125
Boron, Dissolved	0.0069	J	0.200	0.204		mg/L		99	75 - 125
Calcium, Dissolved	10		10.0	20.3		mg/L		98	75 - 125
Iron, Dissolved	ND		10.0	9.56		mg/L		96	75 - 125
Magnesium, Dissolved	ND		10.0	9.85		mg/L		98	75 - 125
Manganese, Dissolved	ND		0.200	0.196		mg/L		98	75 - 125
Molybdenum, Dissolved	0.036		0.200	0.237		mg/L		101	75 - 125
Potassium, Dissolved	15		10.0	23.6		mg/L		87	75 - 125
Selenium, Dissolved	ND		0.200	0.203		mg/L		101	75 - 125
Sodium, Dissolved	2.0		10.0	11.5		mg/L		95	75 - 125

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: 6010C - Dissolved Metals (Continued)

Lab Sample ID: 480-133622-2 MS

Matrix: Water

Analysis Batch: 408570

Client Sample ID: 1315-PC6-02H

Prep Type: Dissolved

Prep Batch: 407413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	0.20		10.0	9.99		mg/L		98	75 - 125

Lab Sample ID: 480-133622-2 MSD

Matrix: Water

Analysis Batch: 407980

Client Sample ID: 1315-PC6-02H

Prep Type: Dissolved

Prep Batch: 407413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic, Dissolved	ND		0.200	0.204		mg/L		102	75 - 125	1	20
Boron, Dissolved	0.0069	J	0.200	0.203		mg/L		98	75 - 125	1	20
Calcium, Dissolved	10		10.0	20.4		mg/L		99	75 - 125	0	20
Iron, Dissolved	ND		10.0	9.55		mg/L		96	75 - 125	0	20
Magnesium, Dissolved	ND		10.0	9.82		mg/L		98	75 - 125	0	20
Manganese, Dissolved	ND		0.200	0.195		mg/L		98	75 - 125	0	20
Molybdenum, Dissolved	0.036		0.200	0.236		mg/L		100	75 - 125	0	20
Potassium, Dissolved	15		10.0	24.1		mg/L		91	75 - 125	2	20
Selenium, Dissolved	ND		0.200	0.199		mg/L		99	75 - 125	2	20
Sodium, Dissolved	2.0		10.0	11.6		mg/L		95	75 - 125	0	20

Lab Sample ID: 480-133622-2 MSD

Matrix: Water

Analysis Batch: 408570

Client Sample ID: 1315-PC6-02H

Prep Type: Dissolved

Prep Batch: 407413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum, Dissolved	0.20		10.0	10.1		mg/L		99	75 - 125	1	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-407546/29

Matrix: Water

Analysis Batch: 407546

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 18:54	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 18:54	1

Lab Sample ID: LCS 480-407546/28

Matrix: Water

Analysis Batch: 407546

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chloride, Dissolved	50.0	50.3		mg/L		101	90 - 110
Sulfate, Dissolved	50.0	51.4		mg/L		103	90 - 110

Lab Sample ID: MB 480-407559/5

Matrix: Water

Analysis Batch: 407559

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/06/18 13:22	1

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 480-407559/5
Matrix: Water
Analysis Batch: 407559

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/06/18 13:22	1

Lab Sample ID: LCS 480-407559/4
Matrix: Water
Analysis Batch: 407559

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	50.5		mg/L		101	90 - 110
Sulfate, Dissolved	50.0	46.6		mg/L		93	90 - 110

Lab Sample ID: 480-133622-3 MS
Matrix: Water
Analysis Batch: 407546

Client Sample ID: 1315-PC3FS1-02H
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	0.41	J	50.0	52.3		mg/L		104	81 - 120
Sulfate, Dissolved	21		50.0	72.6		mg/L		103	80 - 120

Lab Sample ID: 480-133622-3 MSD
Matrix: Water
Analysis Batch: 407546

Client Sample ID: 1315-PC3FS1-02H
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride, Dissolved	0.41	J	50.0	53.0		mg/L		105	81 - 120	1	20
Sulfate, Dissolved	21		50.0	72.9		mg/L		104	80 - 120	0	20

Lab Sample ID: 480-133622-15 MS
Matrix: Water
Analysis Batch: 407546

Client Sample ID: 1315-PC3FS1-02D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		100	108		mg/L		108	81 - 120
Sulfate, Dissolved	34		100	143		mg/L		109	80 - 120

Lab Sample ID: 480-133622-18 MS
Matrix: Water
Analysis Batch: 407559

Client Sample ID: 1315-BLANK-02D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		50.0	51.5		mg/L		103	81 - 120
Sulfate, Dissolved	ND		50.0	47.3		mg/L		95	80 - 120

Lab Sample ID: 480-133622-18 MSD
Matrix: Water
Analysis Batch: 407559

Client Sample ID: 1315-BLANK-02D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride, Dissolved	ND		50.0	51.5		mg/L		103	81 - 120	0	20
Sulfate, Dissolved	ND		50.0	47.1		mg/L		94	80 - 120	0	20

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-407677/19

Matrix: Water

Analysis Batch: 407677

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.649	J	1.0	0.43	mg/L	-		04/07/18 04:23	1

Lab Sample ID: MB 480-407677/3

Matrix: Water

Analysis Batch: 407677

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.680	J	1.0	0.43	mg/L	-		04/06/18 17:15	1

Lab Sample ID: LCS 480-407677/20

Matrix: Water

Analysis Batch: 407677

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	64.5		mg/L	-	107	90 - 110

Lab Sample ID: LCS 480-407677/4

Matrix: Water

Analysis Batch: 407677

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	64.7		mg/L	-	108	90 - 110

Lab Sample ID: 480-133622-2 MS

Matrix: Water

Analysis Batch: 407677

Client Sample ID: 1315-PC6-02H

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	1.2	B	20.0	24.0		mg/L	-	114	54 - 131

Lab Sample ID: 480-133622-11 MS

Matrix: Water

Analysis Batch: 407677

Client Sample ID: 1315-PC3HLD-01D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	5.1	B	20.0	27.7		mg/L	-	113	54 - 131

Lab Sample ID: 480-133622-1 DU

Matrix: Water

Analysis Batch: 407677

Client Sample ID: 1315-PC3-02H

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	1.5	B	1.48		mg/L	-	3	20

Lab Sample ID: 480-133622-10 DU

Matrix: Water

Analysis Batch: 407677

Client Sample ID: 1315-CC3-01D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	5.8	B	5.81		mg/L	-	0.6	20

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Lab Sample ID: MB 480-408554/3
Matrix: Water
Analysis Batch: 408554

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/11/18 19:57	1

Lab Sample ID: LCS 480-408554/4
Matrix: Water
Analysis Batch: 408554

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	62.9		mg/L		105	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-407663/31
Matrix: Water
Analysis Batch: 407663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/06/18 21:51	1

Lab Sample ID: MB 480-407663/7
Matrix: Water
Analysis Batch: 407663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/06/18 19:03	1

Lab Sample ID: LCS 480-407663/32
Matrix: Water
Analysis Batch: 407663

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	101		mg/L		101	90 - 110

Lab Sample ID: LCS 480-407663/8
Matrix: Water
Analysis Batch: 407663

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	101		mg/L		101	90 - 110

Lab Sample ID: 480-133622-18 MS
Matrix: Water
Analysis Batch: 407663

Client Sample ID: 1315-BLANK-02D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	ND		100	94.7		mg/L		95	60 - 140

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 480-133622-17 DU
Matrix: Water
Analysis Batch: 407663

Client Sample ID: 1315-PC3HLDM-02D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Dissolved	190		191		mg/L		1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-407734/1
Matrix: Water
Analysis Batch: 407734

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			04/09/18 06:57	1

Lab Sample ID: LCS 480-407734/2
Matrix: Water
Analysis Batch: 407734

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	506	533		mg/L		105	85 - 115

Lab Sample ID: MB 480-407909/1
Matrix: Water
Analysis Batch: 407909

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6.00	J	10	4.0	mg/L			04/09/18 19:12	1

Lab Sample ID: LCS 480-407909/2
Matrix: Water
Analysis Batch: 407909

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	506	507		mg/L		100	85 - 115

Lab Sample ID: MB 480-407917/1
Matrix: Water
Analysis Batch: 407917

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			04/09/18 20:58	1

Lab Sample ID: LCS 480-407917/2
Matrix: Water
Analysis Batch: 407917

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	506	494		mg/L		98	85 - 115

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 480-133622-5 DU

Matrix: Water

Analysis Batch: 407734

Client Sample ID: 1315-PC3HLDM-02H

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	130		130		mg/L		0	10

Lab Sample ID: 480-133622-15 DU

Matrix: Water

Analysis Batch: 407909

Client Sample ID: 1315-PC3FS1-02D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	140	B	126		mg/L		7	10

Lab Sample ID: 480-133622-18 DU

Matrix: Water

Analysis Batch: 407917

Client Sample ID: 1315-BLANK-02D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	ND		ND		mg/L		NC	10

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

QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Metals

Prep Batch: 407413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	3005A	
480-133622-2	1315-PC6-02H	Dissolved	Water	3005A	
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	3005A	
480-133622-4	1315-CC3-02H	Dissolved	Water	3005A	
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	3005A	
480-133622-6	1315-BLANK-02H	Dissolved	Water	3005A	
480-133622-7	1315-PC3-01D	Dissolved	Water	3005A	
480-133622-8	1315-PC6-01D	Dissolved	Water	3005A	
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	3005A	
480-133622-10	1315-CC3-01D	Dissolved	Water	3005A	
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	3005A	
480-133622-12	1315-BLANK-01D	Dissolved	Water	3005A	
480-133622-13	1315-PC3-02D	Dissolved	Water	3005A	
480-133622-14	1315-PC6-02D	Dissolved	Water	3005A	
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	3005A	
480-133622-16	1315-CC3-02D	Dissolved	Water	3005A	
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	3005A	
480-133622-18	1315-BLANK-02D	Dissolved	Water	3005A	
MB 480-407413/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-407413/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
480-133622-2 MS	1315-PC6-02H	Dissolved	Water	3005A	
480-133622-2 MSD	1315-PC6-02H	Dissolved	Water	3005A	

Analysis Batch: 407980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-2	1315-PC6-02H	Dissolved	Water	6010C	407413
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	6010C	407413
480-133622-4	1315-CC3-02H	Dissolved	Water	6010C	407413
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	6010C	407413
480-133622-6	1315-BLANK-02H	Dissolved	Water	6010C	407413
480-133622-7	1315-PC3-01D	Dissolved	Water	6010C	407413
480-133622-8	1315-PC6-01D	Dissolved	Water	6010C	407413
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	6010C	407413
480-133622-10	1315-CC3-01D	Dissolved	Water	6010C	407413
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	6010C	407413
480-133622-12	1315-BLANK-01D	Dissolved	Water	6010C	407413
480-133622-13	1315-PC3-02D	Dissolved	Water	6010C	407413
480-133622-14	1315-PC6-02D	Dissolved	Water	6010C	407413
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	6010C	407413
480-133622-16	1315-CC3-02D	Dissolved	Water	6010C	407413
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	6010C	407413
480-133622-18	1315-BLANK-02D	Dissolved	Water	6010C	407413
480-133622-2 MS	1315-PC6-02H	Dissolved	Water	6010C	407413
480-133622-2 MSD	1315-PC6-02H	Dissolved	Water	6010C	407413

Analysis Batch: 408521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	6010C	407413
MB 480-407413/1-A	Method Blank	Total Recoverable	Water	6010C	407413
LCS 480-407413/2-A	Lab Control Sample	Total Recoverable	Water	6010C	407413

TestAmerica Buffalo

QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

Metals (Continued)

Analysis Batch: 408570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-2	1315-PC6-02H	Dissolved	Water	6010C	407413
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	6010C	407413
480-133622-4	1315-CC3-02H	Dissolved	Water	6010C	407413
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	6010C	407413
480-133622-6	1315-BLANK-02H	Dissolved	Water	6010C	407413
480-133622-2 MS	1315-PC6-02H	Dissolved	Water	6010C	407413
480-133622-2 MSD	1315-PC6-02H	Dissolved	Water	6010C	407413

Analysis Batch: 408572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-7	1315-PC3-01D	Dissolved	Water	6010C	407413
480-133622-8	1315-PC6-01D	Dissolved	Water	6010C	407413
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	6010C	407413
480-133622-10	1315-CC3-01D	Dissolved	Water	6010C	407413
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	6010C	407413
480-133622-12	1315-BLANK-01D	Dissolved	Water	6010C	407413
480-133622-13	1315-PC3-02D	Dissolved	Water	6010C	407413
480-133622-14	1315-PC6-02D	Dissolved	Water	6010C	407413
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	6010C	407413
480-133622-16	1315-CC3-02D	Dissolved	Water	6010C	407413
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	6010C	407413
480-133622-18	1315-BLANK-02D	Dissolved	Water	6010C	407413

General Chemistry

Analysis Batch: 407546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	9056A	
480-133622-2	1315-PC6-02H	Dissolved	Water	9056A	
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	9056A	
480-133622-4	1315-CC3-02H	Dissolved	Water	9056A	
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	9056A	
480-133622-6	1315-BLANK-02H	Dissolved	Water	9056A	
480-133622-7	1315-PC3-01D	Dissolved	Water	9056A	
480-133622-8	1315-PC6-01D	Dissolved	Water	9056A	
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	9056A	
480-133622-10	1315-CC3-01D	Dissolved	Water	9056A	
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	9056A	
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	9056A	
MB 480-407546/29	Method Blank	Total/NA	Water	9056A	
LCS 480-407546/28	Lab Control Sample	Total/NA	Water	9056A	
480-133622-3 MS	1315-PC3FS1-02H	Dissolved	Water	9056A	
480-133622-3 MSD	1315-PC3FS1-02H	Dissolved	Water	9056A	
480-133622-15 MS	1315-PC3FS1-02D	Dissolved	Water	9056A	

Analysis Batch: 407559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-12	1315-BLANK-01D	Dissolved	Water	9056A	
480-133622-13	1315-PC3-02D	Dissolved	Water	9056A	
480-133622-14	1315-PC6-02D	Dissolved	Water	9056A	

TestAmerica Buffalo

QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

General Chemistry (Continued)

Analysis Batch: 407559 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-16	1315-CC3-02D	Dissolved	Water	9056A	
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	9056A	
480-133622-18	1315-BLANK-02D	Dissolved	Water	9056A	
MB 480-407559/5	Method Blank	Total/NA	Water	9056A	
LCS 480-407559/4	Lab Control Sample	Total/NA	Water	9056A	
480-133622-18 MS	1315-BLANK-02D	Dissolved	Water	9056A	
480-133622-18 MSD	1315-BLANK-02D	Dissolved	Water	9056A	

Analysis Batch: 407663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	SM 2320B	
480-133622-2	1315-PC6-02H	Dissolved	Water	SM 2320B	
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	SM 2320B	
480-133622-4	1315-CC3-02H	Dissolved	Water	SM 2320B	
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	SM 2320B	
480-133622-6	1315-BLANK-02H	Dissolved	Water	SM 2320B	
480-133622-7	1315-PC3-01D	Dissolved	Water	SM 2320B	
480-133622-8	1315-PC6-01D	Dissolved	Water	SM 2320B	
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	SM 2320B	
480-133622-10	1315-CC3-01D	Dissolved	Water	SM 2320B	
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	SM 2320B	
480-133622-12	1315-BLANK-01D	Dissolved	Water	SM 2320B	
480-133622-13	1315-PC3-02D	Dissolved	Water	SM 2320B	
480-133622-14	1315-PC6-02D	Dissolved	Water	SM 2320B	
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	SM 2320B	
480-133622-16	1315-CC3-02D	Dissolved	Water	SM 2320B	
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	SM 2320B	
480-133622-18	1315-BLANK-02D	Dissolved	Water	SM 2320B	
MB 480-407663/31	Method Blank	Total/NA	Water	SM 2320B	
MB 480-407663/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-407663/32	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-407663/8	Lab Control Sample	Total/NA	Water	SM 2320B	
480-133622-18 MS	1315-BLANK-02D	Dissolved	Water	SM 2320B	
480-133622-17 DU	1315-PC3HLDM-02D	Dissolved	Water	SM 2320B	

Analysis Batch: 407677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	9060A	
480-133622-2	1315-PC6-02H	Dissolved	Water	9060A	
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	9060A	
480-133622-4	1315-CC3-02H	Dissolved	Water	9060A	
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	9060A	
480-133622-6	1315-BLANK-02H	Dissolved	Water	9060A	
480-133622-7	1315-PC3-01D	Dissolved	Water	9060A	
480-133622-8	1315-PC6-01D	Dissolved	Water	9060A	
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	9060A	
480-133622-10	1315-CC3-01D	Dissolved	Water	9060A	
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	9060A	
480-133622-12	1315-BLANK-01D	Dissolved	Water	9060A	
480-133622-13	1315-PC3-02D	Dissolved	Water	9060A	
480-133622-14	1315-PC6-02D	Dissolved	Water	9060A	

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QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

General Chemistry (Continued)

Analysis Batch: 407677 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-407677/19	Method Blank	Dissolved	Water	9060A	
MB 480-407677/3	Method Blank	Dissolved	Water	9060A	
LCS 480-407677/20	Lab Control Sample	Dissolved	Water	9060A	
LCS 480-407677/4	Lab Control Sample	Dissolved	Water	9060A	
480-133622-2 MS	1315-PC6-02H	Dissolved	Water	9060A	
480-133622-11 MS	1315-PC3HLDM-01D	Dissolved	Water	9060A	
480-133622-1 DU	1315-PC3-02H	Dissolved	Water	9060A	
480-133622-10 DU	1315-CC3-01D	Dissolved	Water	9060A	

Analysis Batch: 407734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-1	1315-PC3-02H	Dissolved	Water	SM 2540C	
480-133622-2	1315-PC6-02H	Dissolved	Water	SM 2540C	
480-133622-3	1315-PC3FS1-02H	Dissolved	Water	SM 2540C	
480-133622-4	1315-CC3-02H	Dissolved	Water	SM 2540C	
480-133622-5	1315-PC3HLDM-02H	Dissolved	Water	SM 2540C	
480-133622-6	1315-BLANK-02H	Dissolved	Water	SM 2540C	
MB 480-407734/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-407734/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-133622-5 DU	1315-PC3HLDM-02H	Dissolved	Water	SM 2540C	

Analysis Batch: 407909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-7	1315-PC3-01D	Dissolved	Water	SM 2540C	
480-133622-8	1315-PC6-01D	Dissolved	Water	SM 2540C	
480-133622-9	1315-PC3FS1-01D	Dissolved	Water	SM 2540C	
480-133622-10	1315-CC3-01D	Dissolved	Water	SM 2540C	
480-133622-11	1315-PC3HLDM-01D	Dissolved	Water	SM 2540C	
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	SM 2540C	
MB 480-407909/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-407909/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-133622-15 DU	1315-PC3FS1-02D	Dissolved	Water	SM 2540C	

Analysis Batch: 407917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-12	1315-BLANK-01D	Dissolved	Water	SM 2540C	
480-133622-13	1315-PC3-02D	Dissolved	Water	SM 2540C	
480-133622-14	1315-PC6-02D	Dissolved	Water	SM 2540C	
480-133622-16	1315-CC3-02D	Dissolved	Water	SM 2540C	
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	SM 2540C	
480-133622-18	1315-BLANK-02D	Dissolved	Water	SM 2540C	
MB 480-407917/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-407917/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-133622-18 DU	1315-BLANK-02D	Dissolved	Water	SM 2540C	

Analysis Batch: 408554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133622-15	1315-PC3FS1-02D	Dissolved	Water	9060A	
480-133622-16	1315-CC3-02D	Dissolved	Water	9060A	
480-133622-17	1315-PC3HLDM-02D	Dissolved	Water	9060A	
480-133622-18	1315-BLANK-02D	Dissolved	Water	9060A	

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QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

General Chemistry (Continued)

Analysis Batch: 408554 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-408554/3	Method Blank	Dissolved	Water	9060A	
LCS 480-408554/4	Lab Control Sample	Dissolved	Water	9060A	

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Accreditation/Certification Summary

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133622-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: 4/4/18
 COC #: _____
 PAGE: 1 OF 2

Project Name: Baily Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information							Methods for Analysis					RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Dis. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	0609-C01 (2 hour)	4/2/18 1200	W	FS	N	X	X	X	X	X				X	6	
2	0609-C02 (2 hour)	1210				X	X	X	X	X				X		
3	0609-C03 (2 hour)	1220				X	X	X	X	X				X		
4	0609-C04 (2 hour)	1230				X	X	X	X	X				X		
5	0609-C05 (2 hour)	1240				X	X	X	X	X				X		
6	0609-BLANK (2 hour)	1250				X	X	X	X	X				X		
7	0609-C01 (24 hour)	4/2/18 1000				X	X	X	X	X				X		
8	0609-C02 (24 hour)	1010				X	X	X	X	X				X		
9	0609-C03 (24 hour)	1020				X	X	X	X	X				X		
10	0609-C04 (24 hour)	1030				X	X	X	X	X				X		
11	0609-C05 (24 hour)	1040				X	X	X	X	X				X		
12	0609-BLANK (24 hour)	1050				X	X	X	X	X				X		



480-133622 COC

Sampler's Signature: <i>Jeniecea Bradley</i>	Date: 4/4/18	Time: 1115	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT 7 Day Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: <i>Jeniecea Bradley</i>	Date: 4/4/18	Time: 1400	Does COC match samples:	Y or N	
Received By: <i>[Signature]</i>	Date: 4/4/18	Time: 15:15	Broken Container:	Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 4/4/18	Time: 16:10	COC seal intact:	Y or N	
Received By: <i>[Signature]</i>	Date: 4/4/18	Time: 16:10	Other problems:	Y or N	
Relinquished By/Affiliation:	Date:	Time:	WSDOT contacted:	Y or N	
Received By (LAB): <i>Durakow Pirkolb</i>	Date: 4/16/18	Time: 9:30	Date contacted:		
			Cooler Temperature at receipt:	21.6 °C	
			Temp gun #1 ICE		





Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: 4/4/18
 COC #: _____
 PAGE: 2 OF 2

Project Name:	Bailly Treatability Study	Project Contact:	Denise King	Bill To:	NiSource	Disposal Instructions:	LAB
Project Number:	377882016	Phone Number:	978-392-5339			Shipment Method:	FEDEX
Project Manager:	Russell Johnson	Project Phase:	2400			Waybill Number:	N/A

Sample Information							Methods for Analysis					RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Dis. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 Week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	0609-001 (48 hour)	4/4/18 1030	W	FS	N	X	X	X	X	X				X	6	
2	0609-002 (48 hour)	↓ 1040	↓	↓	↓	X	X	X	X	X				X		
3	0609-003 (48 hour)	↓ 1050	↓	↓	↓	X	X	X	X	X				X		
4	0609-004 (48 hour)	↓ 1100	↓	↓	↓	X	X	X	X	X				X		
5	0609-005 (48 hour)	↓ 1110	↓	↓	↓	X	X	X	X	X				X		
6	0609-Blank (48 hour)	↓ 1120	↓	↓	↓	X	X	X	X	X				X		
7																
8																
9																
10																
11																
12																

Sampler's Signature: <u>Jamie Bradley</u>	Date: <u>4/4/18</u>	Time: <u>11:15</u>	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT <u>7 Day</u> Samples are LEAF Method 1615 extractants and have been field filtered Shipped from Kemron - Atlanta GA. NUMBER OF COOLERS SENT: _____
Relinquished By/Affiliation: <u>Jamie Bradley</u>	Date: <u>4/4/18</u>	Time: <u>1400</u>	Does COC match samples:	Y or N	
Received By: <u>[Signature]</u>	Date: <u>4/4/18</u>	Time: <u>15:15</u>	Broken Container:	Y or N	
Relinquished By/Affiliation: <u>[Signature]</u>	Date: <u>4/4/18</u>	Time: <u>16:00</u>	COC seal intact:	Y or N	
Received By: <u>[Signature]</u>	Date: <u>4/4/18</u>	Time: <u>16:00</u>	Other problems:	Y or N	
Relinquished By/Affiliation: _____	Date: _____	Time: _____	WSDOT contacted:	Y or N	
Received By (LAB): <u>ChunKow Likolb</u>	Date: <u>4/25/18</u>	Time: <u>07:30</u>	Date contacted:	_____	
			Cooler Temperature at receipt:	<u>216</u> °C	
			<u>TEMP gun # ICE</u>		



Login Sample Receipt Checklist

Client: Wood Environment & Infrastructure

Job Number: 480-133622-1

Login Number: 133622

List Number: 1

Creator: Kolb, Chris M

List Source: TestAmerica Buffalo

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.	N/A	
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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Reviewed 04/19/2018
Elizabeth Penta
Wood. PLC

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: 480-133851-1

Client Project/Site: Bailly Treatability Study

For:

AMEC Foster Wheeler E & I, Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

4/18/2018 10:49:34 AM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.

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Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-133851-1	1315-PC3-07D	Water	04/09/18 10:05	04/10/18 10:30
480-133851-2	1315-PC6-07D	Water	04/09/18 10:15	04/10/18 10:30
480-133851-3	1315-PC3FS1-07D	Water	04/09/18 10:25	04/10/18 10:30
480-133851-4	1315-CC3-07D	Water	04/09/18 10:35	04/10/18 10:30
480-133851-5	1315-PC3HLDM-07D	Water	04/09/18 10:45	04/10/18 10:30
480-133851-6	1315-BLANK-07D	Water	04/09/18 10:55	04/10/18 10:30



Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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



Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Treatability Study

TestAmerica Job ID: 480-133851-1

Job ID: 480-133851-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-133851-1**

Comments

No additional comments.

Receipt

The samples were received on 4/10/2018 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

HPLC/IC

Method(s) 9056A: The following samples were reported with elevated reporting limits for all analytes: 1315-PC3-07D (480-133851-1), 1315-PC6-07D (480-133851-2), 1315-CC3-07D (480-133851-4), 1315-PC3HLDM-07D (480-133851-5) and 1315-BLANK-07D (480-133851-6). The sample was analyzed at a dilution based on screening results.

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

Metals

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

General Chemistry

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 Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-PC3-07D

Lab Sample ID: 480-133851-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.0		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.014	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.16		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	54		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.43		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	19		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.4		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	3.8	J B	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	5.5		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	160		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	180		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-07D

Lab Sample ID: 480-133851-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.1		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.12		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	76		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0011	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.30		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	33		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	4.6		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	2.1	J B	10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	5.6		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	220		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	230		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-07D

Lab Sample ID: 480-133851-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.70		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.019		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.13		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	50		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.048	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.38		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	25		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.32	J	0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	52	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	96		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	210		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-07D

Lab Sample ID: 480-133851-4

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-CC3-07D (Continued)

Lab Sample ID: 480-133851-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.5		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.016		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.17		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	51		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.78		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	11		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.7		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	7.8		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	5.9	B	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.7		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	120		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	160		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-07D

Lab Sample ID: 480-133851-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.9		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.075		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	140		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0015	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.34		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	22		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.9		1.0	0.32	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.4		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	320		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	300		20	8.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-07D

Lab Sample ID: 480-133851-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium, Dissolved	0.91		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0014	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Alkalinity, Dissolved	5.5		5.0	0.79	mg/L	1		SM 2320B	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-PC3-07D

Lab Sample ID: 480-133851-1

Date Collected: 04/09/18 10:05

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.0		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:13	1
Arsenic, Dissolved	0.014	J	0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:13	1
Boron, Dissolved	0.16		0.020	0.0040	mg/L		04/11/18 09:39	04/13/18 22:58	1
Calcium, Dissolved	54		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:13	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:13	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:13	1
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:13	1
Molybdenum, Dissolved	0.43		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:13	1
Potassium, Dissolved	19		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:13	1
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:13	1
Sodium, Dissolved	2.4		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			04/12/18 02:59	2
Sulfate, Dissolved	3.8	J B	4.0	0.70	mg/L			04/12/18 02:59	2
Dissolved Organic Carbon	5.5		1.0	0.43	mg/L			04/11/18 22:45	1
Alkalinity, Dissolved	160		5.0	0.79	mg/L			04/12/18 12:58	1
Total Dissolved Solids	180		10	4.0	mg/L			04/12/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-PC6-07D

Lab Sample ID: 480-133851-2

Date Collected: 04/09/18 10:15

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.1		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:17	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:17	1
Boron, Dissolved	0.12		0.020	0.0040	mg/L		04/11/18 09:39	04/13/18 23:01	1
Calcium, Dissolved	76		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:17	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:17	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:17	1
Manganese, Dissolved	0.0011	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:17	1
Molybdenum, Dissolved	0.30		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:17	1
Potassium, Dissolved	33		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:17	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:17	1
Sodium, Dissolved	4.6		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			04/12/18 03:08	5
Sulfate, Dissolved	2.1	J B	10	1.7	mg/L			04/12/18 03:08	5
Dissolved Organic Carbon	5.6		1.0	0.43	mg/L			04/11/18 23:40	1
Alkalinity, Dissolved	220		5.0	0.79	mg/L			04/12/18 13:07	1
Total Dissolved Solids	230		10	4.0	mg/L			04/12/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-PC3FS1-07D

Lab Sample ID: 480-133851-3

Date Collected: 04/09/18 10:25

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.70		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:21	1
Arsenic, Dissolved	0.019		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:21	1
Boron, Dissolved	0.13		0.020	0.0040	mg/L		04/11/18 09:39	04/13/18 23:05	1
Calcium, Dissolved	50		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:21	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:21	1
Magnesium, Dissolved	0.048	J	0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:21	1
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:21	1
Molybdenum, Dissolved	0.38		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:21	1
Potassium, Dissolved	25		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:21	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:21	1
Sodium, Dissolved	3.4		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:21	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.32	J	0.50	0.28	mg/L			04/12/18 03:16	1
Sulfate, Dissolved	52	B	2.0	0.35	mg/L			04/12/18 03:16	1
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L			04/12/18 01:31	1
Alkalinity, Dissolved	96		5.0	0.79	mg/L			04/12/18 13:15	1
Total Dissolved Solids	210		10	4.0	mg/L			04/12/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-CC3-07D

Lab Sample ID: 480-133851-4

Date Collected: 04/09/18 10:35

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.5		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:36	1
Arsenic, Dissolved	0.016		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:36	1
Boron, Dissolved	0.17		0.020	0.0040	mg/L		04/11/18 09:39	04/12/18 19:36	1
Calcium, Dissolved	51		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:36	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:36	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:36	1
Manganese, Dissolved	0.0012	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:36	1
Molybdenum, Dissolved	0.78		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:36	1
Potassium, Dissolved	11		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:36	1
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:36	1
Sodium, Dissolved	2.7		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:36	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	7.8		1.0	0.56	mg/L			04/12/18 03:24	2
Sulfate, Dissolved	5.9	B	4.0	0.70	mg/L			04/12/18 03:24	2
Dissolved Organic Carbon	4.7		1.0	0.43	mg/L			04/12/18 02:28	1
Alkalinity, Dissolved	120		5.0	0.79	mg/L			04/12/18 13:23	1
Total Dissolved Solids	160		10	4.0	mg/L			04/12/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-PC3HLDM-07D

Lab Sample ID: 480-133851-5

Date Collected: 04/09/18 10:45

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.9		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:40	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:40	1
Boron, Dissolved	0.075		0.020	0.0040	mg/L		04/11/18 09:39	04/12/18 19:40	1
Calcium, Dissolved	140		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:40	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:40	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:40	1
Manganese, Dissolved	0.0015	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:40	1
Molybdenum, Dissolved	0.34		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:40	1
Potassium, Dissolved	22		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:40	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:40	1
Sodium, Dissolved	2.9		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			04/12/18 03:32	5
Sulfate, Dissolved	ND		10	1.7	mg/L			04/12/18 03:32	5
Dissolved Organic Carbon	5.4		1.0	0.43	mg/L			04/12/18 03:23	1
Alkalinity, Dissolved	320		5.0	0.79	mg/L			04/13/18 22:25	1
Total Dissolved Solids	300		20	8.0	mg/L			04/12/18 23:20	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Client Sample ID: 1315-BLANK-07D

Lab Sample ID: 480-133851-6

Date Collected: 04/09/18 10:55

Matrix: Water

Date Received: 04/10/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 19:44	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 19:44	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/11/18 09:39	04/12/18 19:44	1
Calcium, Dissolved	0.91		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:44	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 19:44	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 19:44	1
Manganese, Dissolved	0.0014	J B	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 19:44	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 19:44	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 19:44	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 19:44	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 19:44	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		10	5.6	mg/L			04/12/18 03:40	20
Sulfate, Dissolved	ND		40	7.0	mg/L			04/12/18 03:40	20
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/12/18 03:50	1
Alkalinity, Dissolved	5.5		5.0	0.79	mg/L			04/13/18 22:34	1
Total Dissolved Solids	ND		10	4.0	mg/L			04/12/18 23:20	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-408180/1-A
Matrix: Water
Analysis Batch: 408671

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 408180

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/11/18 09:39	04/12/18 18:03	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/11/18 09:39	04/12/18 18:03	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 18:03	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/11/18 09:39	04/12/18 18:03	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/11/18 09:39	04/12/18 18:03	1
Manganese, Dissolved	0.00283	J	0.0030	0.00040	mg/L		04/11/18 09:39	04/12/18 18:03	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/11/18 09:39	04/12/18 18:03	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/11/18 09:39	04/12/18 18:03	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/11/18 09:39	04/12/18 18:03	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/11/18 09:39	04/12/18 18:03	1

Lab Sample ID: MB 480-408180/1-A
Matrix: Water
Analysis Batch: 409003

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 408180

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/11/18 09:39	04/13/18 22:51	1

Lab Sample ID: LCS 480-408180/2-A
Matrix: Water
Analysis Batch: 408671

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 408180

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum, Dissolved	10.0	9.89		mg/L		99	80 - 120
Arsenic, Dissolved	0.200	0.206		mg/L		103	80 - 120
Calcium, Dissolved	10.0	9.69		mg/L		97	80 - 120
Iron, Dissolved	10.0	9.41		mg/L		94	80 - 120
Magnesium, Dissolved	10.0	10.4		mg/L		104	80 - 120
Manganese, Dissolved	0.200	0.199		mg/L		100	80 - 120
Molybdenum, Dissolved	0.200	0.199		mg/L		100	80 - 120
Potassium, Dissolved	10.0	9.34		mg/L		93	80 - 120
Selenium, Dissolved	0.200	0.206		mg/L		103	80 - 120
Sodium, Dissolved	10.0	9.21		mg/L		92	80 - 120

Lab Sample ID: LCS 480-408180/2-A
Matrix: Water
Analysis Batch: 409003

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 408180

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron, Dissolved	0.200	0.199		mg/L		100	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-408376/28
Matrix: Water
Analysis Batch: 408376

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/12/18 01:14	1

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 480-408376/28

Matrix: Water

Analysis Batch: 408376

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate, Dissolved	0.376	J	2.0	0.35	mg/L			04/12/18 01:14	1

Lab Sample ID: LCS 480-408376/27

Matrix: Water

Analysis Batch: 408376

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	47.9		mg/L		96	90 - 110
Sulfate, Dissolved	50.0	45.8		mg/L		92	90 - 110

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-408554/3

Matrix: Water

Analysis Batch: 408554

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/11/18 19:57	1

Lab Sample ID: LCS 480-408554/4

Matrix: Water

Analysis Batch: 408554

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	62.9		mg/L		105	90 - 110

Lab Sample ID: 480-133851-2 MS

Matrix: Water

Analysis Batch: 408554

Client Sample ID: 1315-PC6-07D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	5.6		20.0	26.2		mg/L		103	54 - 131

Lab Sample ID: 480-133851-4 MS

Matrix: Water

Analysis Batch: 408554

Client Sample ID: 1315-CC3-07D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	4.7		20.0	25.7		mg/L		105	54 - 131

Lab Sample ID: 480-133851-1 DU

Matrix: Water

Analysis Batch: 408554

Client Sample ID: 1315-PC3-07D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	5.5		5.66		mg/L		2	20

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Method: 9060A - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 480-133851-6 DU
Matrix: Water
Analysis Batch: 408554

Client Sample ID: 1315-BLANK-07D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Dissolved Organic Carbon	ND		ND		mg/L		NC	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-408534/7
Matrix: Water
Analysis Batch: 408534

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/12/18 09:59	1

Lab Sample ID: LCS 480-408534/8
Matrix: Water
Analysis Batch: 408534

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	98.5		mg/L		98	90 - 110

Lab Sample ID: MB 480-408856/7
Matrix: Water
Analysis Batch: 408856

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/13/18 20:52	1

Lab Sample ID: LCS 480-408856/8
Matrix: Water
Analysis Batch: 408856

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	97.6		mg/L		98	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-408622/1
Matrix: Water
Analysis Batch: 408622

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			04/12/18 23:20	1

Lab Sample ID: LCS 480-408622/2
Matrix: Water
Analysis Batch: 408622

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	512	498		mg/L		97	85 - 115

TestAmerica Buffalo

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 480-133851-1 DU
 Matrix: Water
 Analysis Batch: 408622

Client Sample ID: 1315-PC3-07D
 Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	180		176		mg/L		0	10

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

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

Metals

Prep Batch: 408180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	3005A	
480-133851-2	1315-PC6-07D	Dissolved	Water	3005A	
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	3005A	
480-133851-4	1315-CC3-07D	Dissolved	Water	3005A	
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	3005A	
480-133851-6	1315-BLANK-07D	Dissolved	Water	3005A	
MB 480-408180/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-408180/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 408671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	6010C	408180
480-133851-2	1315-PC6-07D	Dissolved	Water	6010C	408180
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	6010C	408180
480-133851-4	1315-CC3-07D	Dissolved	Water	6010C	408180
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	6010C	408180
480-133851-6	1315-BLANK-07D	Dissolved	Water	6010C	408180
MB 480-408180/1-A	Method Blank	Total Recoverable	Water	6010C	408180
LCS 480-408180/2-A	Lab Control Sample	Total Recoverable	Water	6010C	408180

Analysis Batch: 409003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	6010C	408180
480-133851-2	1315-PC6-07D	Dissolved	Water	6010C	408180
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	6010C	408180
MB 480-408180/1-A	Method Blank	Total Recoverable	Water	6010C	408180
LCS 480-408180/2-A	Lab Control Sample	Total Recoverable	Water	6010C	408180

General Chemistry

Analysis Batch: 408376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	9056A	
480-133851-2	1315-PC6-07D	Dissolved	Water	9056A	
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	9056A	
480-133851-4	1315-CC3-07D	Dissolved	Water	9056A	
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	9056A	
480-133851-6	1315-BLANK-07D	Dissolved	Water	9056A	
MB 480-408376/28	Method Blank	Total/NA	Water	9056A	
LCS 480-408376/27	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 408534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	SM 2320B	
480-133851-2	1315-PC6-07D	Dissolved	Water	SM 2320B	
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	SM 2320B	
480-133851-4	1315-CC3-07D	Dissolved	Water	SM 2320B	
MB 480-408534/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-408534/8	Lab Control Sample	Total/NA	Water	SM 2320B	

TestAmerica Buffalo

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

General Chemistry (Continued)

Analysis Batch: 408554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	9060A	
480-133851-2	1315-PC6-07D	Dissolved	Water	9060A	
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	9060A	
480-133851-4	1315-CC3-07D	Dissolved	Water	9060A	
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	9060A	
480-133851-6	1315-BLANK-07D	Dissolved	Water	9060A	
MB 480-408554/3	Method Blank	Dissolved	Water	9060A	
LCS 480-408554/4	Lab Control Sample	Dissolved	Water	9060A	
480-133851-2 MS	1315-PC6-07D	Dissolved	Water	9060A	
480-133851-4 MS	1315-CC3-07D	Dissolved	Water	9060A	
480-133851-1 DU	1315-PC3-07D	Dissolved	Water	9060A	
480-133851-6 DU	1315-BLANK-07D	Dissolved	Water	9060A	

Analysis Batch: 408622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-1	1315-PC3-07D	Dissolved	Water	SM 2540C	
480-133851-2	1315-PC6-07D	Dissolved	Water	SM 2540C	
480-133851-3	1315-PC3FS1-07D	Dissolved	Water	SM 2540C	
480-133851-4	1315-CC3-07D	Dissolved	Water	SM 2540C	
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	SM 2540C	
480-133851-6	1315-BLANK-07D	Dissolved	Water	SM 2540C	
MB 480-408622/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-408622/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-133851-1 DU	1315-PC3-07D	Dissolved	Water	SM 2540C	

Analysis Batch: 408856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-133851-5	1315-PC3HLDLDM-07D	Dissolved	Water	SM 2320B	
480-133851-6	1315-BLANK-07D	Dissolved	Water	SM 2320B	
MB 480-408856/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-408856/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-133851-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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

TW Buffalo



Amec Foster Wheeler Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

SHIP TO:
TestAmerica
10 Hazelwood Drive
Amherst, NY 14228
(716) 504-9838

CHAIN OF CUSTODY

DATE: 4/9/18
COC #: _____
PAGE: 1 OF 1

Project Name: Bailly Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information							Methods for Analysis					RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Dis. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1315-PC3-07D	4/9/18 1005	W	FS	N	X	X	X	X	X						
2	1315-PC6-07D	↓ 1015	↓	↓	↓	X	X	X	X	X						
3	1315-PC3FS1-07D	↓ 1025	↓	↓	↓	X	X	X	X	X						
4	1315-CC3-07D	↓ 1035	↓	↓	↓	X	X	X	X	X						
5	1315-PC3HLDN-07D	↓ 1045	↓	↓	↓	X	X	X	X	X						
6	1315-BLANK-07D	↓ 1055	↓	↓	↓	X	X	X	X	X						
7																
8																
9																
10																
11																
12																



480-133851 COC

SEE BELOW

Sampler's Signature: Jamecia Bradley	Date: 4/9/18	Time: 1100	For Lab Use	Comments: X=Analyze H=Hold Analysis Request ****5 DAY TAT**** Results due 4/17/18 Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: Jamecia Bradley	Date: 4/9/18	Time: 1302	Does COC match samples: Y or N	
Received By: Benj Jay	Date: 4/9/18	Time: 13:02	Broken Container: Y or N	
Relinquished By/Affiliation: Benj Jay	Date: 4/9/18	Time: 16:04	COC seal intact: Y or N	
Received By:	Date:	Time:	Other problems: Y or N	
Relinquished By/Affiliation:	Date:	Time:	WSDOT contacted: Y or N	
Received By (LAB): Chonkwan Cikalob	Date: 4/10/18	Time: 1030	Date contacted: _____	
			Cooler Temperature at receipt: 2.7 °C	
			#1 ICE	



Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-133851-1

Login Number: 133851

List Number: 1

Creator: Kolb, Chris M

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Reviewed 04/26/2018
Denise King
Wood

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: 480-134296-1

Client Project/Site: Bailly Generating Station

For:

Wood Environment & Infrastructure

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

4/26/2018 10:38:31 AM

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com



LINKS

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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.

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Sample Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-134296-1	1315-PC3-14D	Water	04/16/18 10:00	04/17/18 09:50
480-134296-2	1315-PC6-14D	Water	04/16/18 10:10	04/17/18 09:50
480-134296-3	1315-PC3FS1-14D	Water	04/16/18 10:20	04/17/18 09:50
480-134296-4	1315-CC3-14D	Water	04/16/18 10:30	04/17/18 09:50
480-134296-5	1315-PC3HLDM-14D	Water	04/16/18 10:40	04/17/18 09:50
480-134296-6	1315-BLANK-14D	Water	04/16/18 10:50	04/17/18 09:50

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Method Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Qualifiers

Metals

Qualifier	Qualifier Description
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
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Job ID: 480-134296-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-134296-1**

Comments

No additional comments.

Receipt

The samples were received on 4/17/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

HPLC/IC

Method(s) 9056A: The following sample was reported with elevated reporting limits for all analytes: 1315-PC3HLDM-14D (480-134296-5). The sample was analyzed at a dilution based on screening results.

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

Metals

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

General Chemistry

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



Detection Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-PC3-14D

Lab Sample ID: 480-134296-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.1		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.012	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.21		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	49		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.43		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	15		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.010	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.9		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.47	J	0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	4.5		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	5.0		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	150		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	190	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-14D

Lab Sample ID: 480-134296-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.3		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.15		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	63		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.11	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00072	J	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	22		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	4.7		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.59		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	3.7		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	5.2		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	200		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	240	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-14D

Lab Sample ID: 480-134296-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.73		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.020		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.15		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	41		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.072	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.23		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	18		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.86		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	37		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.5		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	97		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	180	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-14D

Lab Sample ID: 480-134296-4

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-CC3-14D (Continued)

Lab Sample ID: 480-134296-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.2		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.018		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.19		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	40		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.61		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	7.5		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.013	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.7		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	3.5		0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	14		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	4.0		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	100		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	160	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-14D

Lab Sample ID: 480-134296-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.2		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.086		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	110		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	13		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.8		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	1.7	J	10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	280		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	310	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-14D

Lab Sample ID: 480-134296-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium, Dissolved	0.11	J	0.50	0.10	mg/L	1		6010C	Dissolved
Alkalinity, Dissolved	2.9	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	7.0	J B	10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-PC3-14D

Lab Sample ID: 480-134296-1

Date Collected: 04/16/18 10:00

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.1		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:18	1
Arsenic, Dissolved	0.012	J	0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:18	1
Boron, Dissolved	0.21		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:18	1
Calcium, Dissolved	49		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:18	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:18	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:18	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:18	1
Molybdenum, Dissolved	0.43		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:18	1
Potassium, Dissolved	15		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:18	1
Selenium, Dissolved	0.010	J	0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:18	1
Sodium, Dissolved	1.9		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.47	J	0.50	0.28	mg/L			04/24/18 16:41	1
Sulfate, Dissolved	4.5		2.0	0.35	mg/L			04/24/18 16:41	1
Dissolved Organic Carbon	5.0		1.0	0.43	mg/L			04/22/18 22:07	1
Alkalinity, Dissolved	150		5.0	0.79	mg/L			04/21/18 11:05	1
Total Dissolved Solids	190	B	10	4.0	mg/L			04/20/18 13:13	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-PC6-14D

Lab Sample ID: 480-134296-2

Date Collected: 04/16/18 10:10

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.3		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:48	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:48	1
Boron, Dissolved	0.15		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:48	1
Calcium, Dissolved	63		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:48	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:48	1
Magnesium, Dissolved	0.11	J	0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:48	1
Manganese, Dissolved	0.00072	J	0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:48	1
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:48	1
Potassium, Dissolved	22		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:48	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:48	1
Sodium, Dissolved	4.7		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:48	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.59		0.50	0.28	mg/L			04/21/18 17:34	1
Sulfate, Dissolved	3.7		2.0	0.35	mg/L			04/21/18 17:34	1
Dissolved Organic Carbon	5.2		1.0	0.43	mg/L			04/22/18 23:03	1
Alkalinity, Dissolved	200		5.0	0.79	mg/L			04/21/18 11:13	1
Total Dissolved Solids	240	B	10	4.0	mg/L			04/20/18 13:13	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-PC3FS1-14D

Lab Sample ID: 480-134296-3

Date Collected: 04/16/18 10:20

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.73		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:52	1
Arsenic, Dissolved	0.020		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:52	1
Boron, Dissolved	0.15		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:52	1
Calcium, Dissolved	41		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:52	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:52	1
Magnesium, Dissolved	0.072	J	0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:52	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:52	1
Molybdenum, Dissolved	0.23		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:52	1
Potassium, Dissolved	18		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:52	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:52	1
Sodium, Dissolved	2.4		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.86		0.50	0.28	mg/L			04/21/18 18:15	1
Sulfate, Dissolved	37		2.0	0.35	mg/L			04/21/18 18:15	1
Dissolved Organic Carbon	2.5		1.0	0.43	mg/L			04/22/18 23:31	1
Alkalinity, Dissolved	97		5.0	0.79	mg/L			04/21/18 11:21	1
Total Dissolved Solids	180	B	10	4.0	mg/L			04/20/18 13:13	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-CC3-14D

Lab Sample ID: 480-134296-4

Date Collected: 04/16/18 10:30

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.2		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:56	1
Arsenic, Dissolved	0.018		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:56	1
Boron, Dissolved	0.19		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:56	1
Calcium, Dissolved	40		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:56	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:56	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:56	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:56	1
Molybdenum, Dissolved	0.61		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:56	1
Potassium, Dissolved	7.5		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:56	1
Selenium, Dissolved	0.013	J	0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:56	1
Sodium, Dissolved	1.7		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	3.5		0.50	0.28	mg/L			04/21/18 18:23	1
Sulfate, Dissolved	14		2.0	0.35	mg/L			04/21/18 18:23	1
Dissolved Organic Carbon	4.0		1.0	0.43	mg/L			04/23/18 00:26	1
Alkalinity, Dissolved	100		5.0	0.79	mg/L			04/21/18 11:45	1
Total Dissolved Solids	160	B	10	4.0	mg/L			04/20/18 13:13	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-PC3HLDM-14D

Lab Sample ID: 480-134296-5

Date Collected: 04/16/18 10:40

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.2		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:59	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:59	1
Boron, Dissolved	0.086		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:59	1
Calcium, Dissolved	110		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:59	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:59	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:59	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:59	1
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:59	1
Potassium, Dissolved	13		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:59	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:59	1
Sodium, Dissolved	1.8		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			04/21/18 18:31	5
Sulfate, Dissolved	1.7	J	10	1.7	mg/L			04/21/18 18:31	5
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L			04/23/18 00:54	1
Alkalinity, Dissolved	280		5.0	0.79	mg/L			04/21/18 11:54	1
Total Dissolved Solids	310	B	10	4.0	mg/L			04/20/18 13:13	1

Client Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Client Sample ID: 1315-BLANK-14D

Lab Sample ID: 480-134296-6

Date Collected: 04/16/18 10:50

Matrix: Water

Date Received: 04/17/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 21:03	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 21:03	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 21:03	1
Calcium, Dissolved	0.11	J	0.50	0.10	mg/L		04/18/18 09:50	04/18/18 21:03	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 21:03	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/18/18 09:50	04/18/18 21:03	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 21:03	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 21:03	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 21:03	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 21:03	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 21:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/21/18 18:39	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/21/18 18:39	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/23/18 01:21	1
Alkalinity, Dissolved	2.9	J	5.0	0.79	mg/L			04/21/18 12:01	1
Total Dissolved Solids	7.0	J B	10	4.0	mg/L			04/20/18 13:13	1

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-409397/1-A
Matrix: Water
Analysis Batch: 409693

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 409397

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		04/18/18 09:50	04/18/18 20:11	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		04/18/18 09:50	04/18/18 20:11	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		04/18/18 09:50	04/18/18 20:11	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:11	1
Iron, Dissolved	ND		0.050	0.019	mg/L		04/18/18 09:50	04/18/18 20:11	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		04/18/18 09:50	04/18/18 20:11	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		04/18/18 09:50	04/18/18 20:11	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		04/18/18 09:50	04/18/18 20:11	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		04/18/18 09:50	04/18/18 20:11	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		04/18/18 09:50	04/18/18 20:11	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		04/18/18 09:50	04/18/18 20:11	1

Lab Sample ID: LCS 480-409397/2-A
Matrix: Water
Analysis Batch: 409693

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 409397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	9.19		mg/L		92	80 - 120
Arsenic, Dissolved	0.200	0.188		mg/L		94	80 - 120
Boron, Dissolved	0.200	0.185		mg/L		92	80 - 120
Calcium, Dissolved	10.0	9.43		mg/L		94	80 - 120
Iron, Dissolved	10.0	9.87		mg/L		99	80 - 120
Magnesium, Dissolved	10.0	9.44		mg/L		94	80 - 120
Manganese, Dissolved	0.200	0.195		mg/L		97	80 - 120
Molybdenum, Dissolved	0.200	0.195		mg/L		97	80 - 120
Potassium, Dissolved	10.0	9.65		mg/L		96	80 - 120
Selenium, Dissolved	0.200	0.184		mg/L		92	80 - 120
Sodium, Dissolved	10.0	9.65		mg/L		96	80 - 120

Lab Sample ID: 480-134296-1 MS
Matrix: Water
Analysis Batch: 409693

Client Sample ID: 1315-PC3-14D
Prep Type: Dissolved
Prep Batch: 409397

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	2.1		10.0	11.3		mg/L		91	75 - 125
Arsenic, Dissolved	0.012	J	0.200	0.208		mg/L		98	75 - 125
Boron, Dissolved	0.21		0.200	0.398		mg/L		93	75 - 125
Calcium, Dissolved	49		10.0	58.2	4	mg/L		89	75 - 125
Iron, Dissolved	ND		10.0	9.80		mg/L		98	75 - 125
Magnesium, Dissolved	ND		10.0	9.35		mg/L		93	75 - 125
Manganese, Dissolved	ND		0.200	0.192		mg/L		96	75 - 125
Molybdenum, Dissolved	0.43		0.200	0.613		mg/L		94	75 - 125
Potassium, Dissolved	15		10.0	24.4		mg/L		96	75 - 125
Selenium, Dissolved	0.010	J	0.200	0.195		mg/L		92	75 - 125
Sodium, Dissolved	1.9		10.0	11.6		mg/L		97	75 - 125

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Method: 6010C - Dissolved Metals (Continued)

Lab Sample ID: 480-134296-1 MSD

Matrix: Water

Analysis Batch: 409693

Client Sample ID: 1315-PC3-14D

Prep Type: Dissolved

Prep Batch: 409397

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Aluminum, Dissolved	2.1		10.0	11.0		mg/L		89	75 - 125	2	20
Arsenic, Dissolved	0.012	J	0.200	0.200		mg/L		94	75 - 125	4	20
Boron, Dissolved	0.21		0.200	0.394		mg/L		91	75 - 125	1	20
Calcium, Dissolved	49		10.0	57.8	4	mg/L		85	75 - 125	1	20
Iron, Dissolved	ND		10.0	9.57		mg/L		96	75 - 125	2	20
Magnesium, Dissolved	ND		10.0	9.13		mg/L		91	75 - 125	2	20
Manganese, Dissolved	ND		0.200	0.188		mg/L		94	75 - 125	2	20
Molybdenum, Dissolved	0.43		0.200	0.610		mg/L		92	75 - 125	1	20
Potassium, Dissolved	15		10.0	24.1		mg/L		93	75 - 125	1	20
Selenium, Dissolved	0.010	J	0.200	0.202		mg/L		96	75 - 125	4	20
Sodium, Dissolved	1.9		10.0	11.3		mg/L		94	75 - 125	3	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-410129/29

Matrix: Water

Analysis Batch: 410129

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/21/18 16:45	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/21/18 16:45	1

Lab Sample ID: LCS 480-410129/28

Matrix: Water

Analysis Batch: 410129

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Chloride, Dissolved	50.0	50.6		mg/L		101	90 - 110
Sulfate, Dissolved	50.0	50.1		mg/L		100	90 - 110

Lab Sample ID: MB 480-410565/5

Matrix: Water

Analysis Batch: 410565

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride, Dissolved	ND		0.50	0.28	mg/L			04/24/18 13:46	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			04/24/18 13:46	1

Lab Sample ID: LCS 480-410565/4

Matrix: Water

Analysis Batch: 410565

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Chloride, Dissolved	50.0	50.8		mg/L		102	90 - 110
Sulfate, Dissolved	50.0	48.7		mg/L		97	90 - 110

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-134296-2 MS

Matrix: Water

Analysis Batch: 410129

Client Sample ID: 1315-PC6-14D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	0.59		50.0	52.0		mg/L		103	81 - 120
Sulfate, Dissolved	3.7		50.0	54.7		mg/L		102	80 - 120

Lab Sample ID: 480-134296-2 MSD

Matrix: Water

Analysis Batch: 410129

Client Sample ID: 1315-PC6-14D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride, Dissolved	0.59		50.0	51.9		mg/L		103	81 - 120	0	20
Sulfate, Dissolved	3.7		50.0	54.8		mg/L		102	80 - 120	0	20

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-410266/3

Matrix: Water

Analysis Batch: 410266

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			04/22/18 21:11	1

Lab Sample ID: LCS 480-410266/4

Matrix: Water

Analysis Batch: 410266

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	63.1		mg/L		105	90 - 110

Lab Sample ID: 480-134296-3 MS

Matrix: Water

Analysis Batch: 410266

Client Sample ID: 1315-PC3FS1-14D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	2.5		20.0	23.6		mg/L		106	54 - 131

Lab Sample ID: 480-134296-1 DU

Matrix: Water

Analysis Batch: 410266

Client Sample ID: 1315-PC3-14D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	5.0		4.95		mg/L		0.05	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-410137/7

Matrix: Water

Analysis Batch: 410137

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			04/21/18 10:01	1

TestAmerica Buffalo

QC Sample Results

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Lab Sample ID: LCS 480-410137/8
 Matrix: Water
 Analysis Batch: 410137

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	98.4		mg/L		98	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-409988/1
 Matrix: Water
 Analysis Batch: 409988

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9.00	J	10	4.0	mg/L			04/20/18 13:13	1

Lab Sample ID: LCS 480-409988/2
 Matrix: Water
 Analysis Batch: 409988

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	515	531		mg/L		103	85 - 115

Lab Sample ID: 480-134296-4 DU
 Matrix: Water
 Analysis Batch: 409988

Client Sample ID: 1315-CC3-14D
 Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	160	B	158		mg/L		0.6	10

QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

Metals

Prep Batch: 409397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	3005A	
480-134296-2	1315-PC6-14D	Dissolved	Water	3005A	
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	3005A	
480-134296-4	1315-CC3-14D	Dissolved	Water	3005A	
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	3005A	
480-134296-6	1315-BLANK-14D	Dissolved	Water	3005A	
MB 480-409397/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-409397/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
480-134296-1 MS	1315-PC3-14D	Dissolved	Water	3005A	
480-134296-1 MSD	1315-PC3-14D	Dissolved	Water	3005A	

Analysis Batch: 409693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	6010C	409397
480-134296-2	1315-PC6-14D	Dissolved	Water	6010C	409397
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	6010C	409397
480-134296-4	1315-CC3-14D	Dissolved	Water	6010C	409397
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	6010C	409397
480-134296-6	1315-BLANK-14D	Dissolved	Water	6010C	409397
MB 480-409397/1-A	Method Blank	Total Recoverable	Water	6010C	409397
LCS 480-409397/2-A	Lab Control Sample	Total Recoverable	Water	6010C	409397
480-134296-1 MS	1315-PC3-14D	Dissolved	Water	6010C	409397
480-134296-1 MSD	1315-PC3-14D	Dissolved	Water	6010C	409397

General Chemistry

Analysis Batch: 409988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	SM 2540C	
480-134296-2	1315-PC6-14D	Dissolved	Water	SM 2540C	
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	SM 2540C	
480-134296-4	1315-CC3-14D	Dissolved	Water	SM 2540C	
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	SM 2540C	
480-134296-6	1315-BLANK-14D	Dissolved	Water	SM 2540C	
MB 480-409988/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-409988/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-134296-4 DU	1315-CC3-14D	Dissolved	Water	SM 2540C	

Analysis Batch: 410129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-2	1315-PC6-14D	Dissolved	Water	9056A	
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	9056A	
480-134296-4	1315-CC3-14D	Dissolved	Water	9056A	
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	9056A	
480-134296-6	1315-BLANK-14D	Dissolved	Water	9056A	
MB 480-410129/29	Method Blank	Total/NA	Water	9056A	
LCS 480-410129/28	Lab Control Sample	Total/NA	Water	9056A	
480-134296-2 MS	1315-PC6-14D	Dissolved	Water	9056A	
480-134296-2 MSD	1315-PC6-14D	Dissolved	Water	9056A	

TestAmerica Buffalo

QC Association Summary

Client: Wood Environment & Infrastructure
Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

General Chemistry (Continued)

Analysis Batch: 410137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	SM 2320B	
480-134296-2	1315-PC6-14D	Dissolved	Water	SM 2320B	
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	SM 2320B	
480-134296-4	1315-CC3-14D	Dissolved	Water	SM 2320B	
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	SM 2320B	
480-134296-6	1315-BLANK-14D	Dissolved	Water	SM 2320B	
MB 480-410137/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-410137/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 410266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	9060A	
480-134296-2	1315-PC6-14D	Dissolved	Water	9060A	
480-134296-3	1315-PC3FS1-14D	Dissolved	Water	9060A	
480-134296-4	1315-CC3-14D	Dissolved	Water	9060A	
480-134296-5	1315-PC3HLDM-14D	Dissolved	Water	9060A	
480-134296-6	1315-BLANK-14D	Dissolved	Water	9060A	
MB 480-410266/3	Method Blank	Dissolved	Water	9060A	
LCS 480-410266/4	Lab Control Sample	Dissolved	Water	9060A	
480-134296-3 MS	1315-PC3FS1-14D	Dissolved	Water	9060A	
480-134296-1 DU	1315-PC3-14D	Dissolved	Water	9060A	

Analysis Batch: 410565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-134296-1	1315-PC3-14D	Dissolved	Water	9056A	
MB 480-410565/5	Method Blank	Total/NA	Water	9056A	
LCS 480-410565/4	Lab Control Sample	Total/NA	Water	9056A	

Accreditation/Certification Summary

Client: Wood Environment & Infrastructure
 Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-134296-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
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	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14226
 (716) 504-9838

681-Atlanta

CHAIN OF CUSTODY

DATE: 4/16/18

COC #: _____

PAGE: 1 OF 1

Project Name: Bailey Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information						Methods for Analysis					RUSH					
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Dis. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1315-PC3-14D	4/16/18 1000	W	FS	N	X	X	X	X	X						
2	1315-PC6-14D	↓ 1010	↓	↓	↓	X	X	X	X	X						
3	1315-PC3FS1-14D	↓ 1020	↓	↓	↓	X	X	X	X	X						
4	1315-CC3-14D	↓ 1030	↓	↓	↓	X	X	X	X	X						
5	1315-PC3HLDX-14D	↓ 1040	↓	↓	↓	X	X	X	X	X						
6	1315-BLANK-14D	↓ 1050	↓	↓	↓	X	X	X	X	X						
7																
8																
9																
10																
11																
12																



480-134296 COC

SEE BELOW

Sampler's Signature: Jemecia Bradley	Date: 4/16/18	Time: 10:55	For Lab Use	Comments:
Relinquished By/Affiliation: Jemecia Bradley	Date: 4/16/18	Time: 12:13:45	Does COC match samples: Y or N	X=Analyze H=Hold Analysis Request Standard TAT * 5 DA TAT * Results due 4/24/18 Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Received By: [Signature]	Date: 4/16/18	Time: 13:45	Broken Container: Y or N	
Relinquished By/Affiliation: [Signature]	Date: 4/16/18	Time: 16:06	COC seal intact: Y or N	
Received By: [Signature]	Date: 4/16/18	Time: 16:06	Other problems: Y or N	
Relinquished By/Affiliation: [Signature]	Date: 4/16/18	Time: 16:06	WSDOT contacted: Y or N	
Received By (LAB): Chankow Cicolto	Date: 4/17/18	Time: 09:50	Date contacted: Y or N	
			Cooler Temperature at receipt: 3.0 #! C	



Login Sample Receipt Checklist

Client: Wood Environment & Infrastructure

Job Number: 480-134296-1

Login Number: 134296

List Number: 1

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	AMEC FW
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

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: 480-135145-1

Client Project/Site: Bailly Treatability Study

Revision: 1

For:

Wood E&I Solutions Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

5/25/2018 10:53:54 AM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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results through

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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.

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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-135145-1	1315-PC3-28D	Water	04/30/18 10:00	05/01/18 10:45
480-135145-2	1315-PC6-28D	Water	04/30/18 10:10	05/01/18 10:45
480-135145-3	1315-PC3FS1-28D	Water	04/30/18 10:20	05/01/18 10:45
480-135145-4	1315-CC3-28D	Water	04/30/18 10:30	05/01/18 10:45
480-135145-5	1315-PC3HLDM-28D	Water	04/30/18 10:40	05/01/18 10:45
480-135145-6	1315-BLANK-28D	Water	04/30/18 10:50	05/01/18 10:45

- 1
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- 10
- 11
- 12
- 13

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Job ID: 480-135145-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-135145-1**

Revision

This report has been revised to correct a sample ID.

Receipt

The samples were received on 5/1/2018 10:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

HPLC/IC

Method(s) 9056A: The following samples were reported with elevated reporting limits for all analytes: 1315-PC3-28D (480-135145-1), 1315-PC6-28D (480-135145-2), 1315-CC3-28D (480-135145-4) and 1315-PC3HLDM-28D (480-135145-5). The sample was analyzed at a dilution based on screening results.

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

Metals

Method(s) 6010C: The Continuing Calibration Verification (CCV 480-413801/57) recovered above the upper control limit for Dissolved Manganese. The samples 1315-CC3-28D (480-135145-4), 1315-PC3HLDM-28D (480-135145-5) and 1315-BLANK-28D (480-135145-6) associated with this CCV were below the laboratory's standard reporting limit for the affected analyte; therefore, the data have been reported.

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

General Chemistry

Method(s) SM 2320B: The following sample(s) was received with headspace in the sample container. This sample container was received with headspace. 1315-PC3-28D (480-135145-1), 1315-PC6-28D (480-135145-2), 1315-PC3FS1-28D (480-135145-3), 1315-CC3-28D (480-135145-4), 1315-PC3HLDM-28D (480-135145-5) and 1315-BLANK-28D (480-135145-6).

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

Detection Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-PC3-28D

Lab Sample ID: 480-135145-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.7		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.018		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.39		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	51		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00092	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.71		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	17		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.021	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.4		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	9.0		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	6.1	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	150	F1	5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-28D

Lab Sample ID: 480-135145-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	3.3		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0086	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.30		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	64		0.50	0.10	mg/L	1		6010C	Dissolved
Iron, Dissolved	0.020	J	0.050	0.019	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0016	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.62		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	28		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.016	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.9		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	9.4		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	5.6	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	190		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	150		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-28D

Lab Sample ID: 480-135145-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.94		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.029		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.27		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	44		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.082	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.0013	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	18		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.3		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	40		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.7	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	94		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-CC3-28D

Lab Sample ID: 480-135145-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.3		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.034		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.36		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	39		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00096	J B ^	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.82		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	8.2		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.019	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.8		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	1.6		1.0	0.56	mg/L	2		9056A	Dissolved
Sulfate, Dissolved	22		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.6	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	90		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	120		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-28D

Lab Sample ID: 480-135145-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	3.1		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0068	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.16		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	100		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00088	J B ^	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.40		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	18		0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.4		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	2.9	J	10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	3.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	270		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	240		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-28D

Lab Sample ID: 480-135145-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	0.00076	J B ^	0.0030	0.00040	mg/L	1		6010C	Dissolved
Alkalinity, Dissolved	1.9	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-PC3-28D

Lab Sample ID: 480-135145-1

Date Collected: 04/30/18 10:00

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.7		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 22:56	1
Arsenic, Dissolved	0.018		0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 22:56	1
Boron, Dissolved	0.39		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 22:56	1
Calcium, Dissolved	51		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 22:56	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 22:56	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 22:56	1
Manganese, Dissolved	0.00092	J B	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 22:56	1
Molybdenum, Dissolved	0.71		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 22:56	1
Potassium, Dissolved	17		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 22:56	1
Selenium, Dissolved	0.021	J	0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 22:56	1
Sodium, Dissolved	2.4		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 22:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			05/05/18 00:53	2
Sulfate, Dissolved	9.0		4.0	0.70	mg/L			05/05/18 00:53	2
Dissolved Organic Carbon	6.1	B	1.0	0.43	mg/L			05/11/18 12:47	1
Alkalinity, Dissolved	150	F1	5.0	0.79	mg/L			05/03/18 13:59	1
Total Dissolved Solids	130		10	4.0	mg/L			05/07/18 13:54	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-PC6-28D

Lab Sample ID: 480-135145-2

Date Collected: 04/30/18 10:10

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	3.3		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 23:00	1
Arsenic, Dissolved	0.0086	J	0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 23:00	1
Boron, Dissolved	0.30		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 23:00	1
Calcium, Dissolved	64		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:00	1
Iron, Dissolved	0.020	J	0.050	0.019	mg/L		05/08/18 08:31	05/10/18 23:00	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 23:00	1
Manganese, Dissolved	0.0016	J B	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 23:00	1
Molybdenum, Dissolved	0.62		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 23:00	1
Potassium, Dissolved	28		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:00	1
Selenium, Dissolved	0.016	J	0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 23:00	1
Sodium, Dissolved	3.9		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 23:00	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			05/05/18 01:02	2
Sulfate, Dissolved	9.4		4.0	0.70	mg/L			05/05/18 01:02	2
Dissolved Organic Carbon	5.6	B	1.0	0.43	mg/L			05/11/18 11:05	1
Alkalinity, Dissolved	190		5.0	0.79	mg/L			05/03/18 14:13	1
Total Dissolved Solids	150		10	4.0	mg/L			05/07/18 13:54	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-PC3FS1-28D

Lab Sample ID: 480-135145-3

Date Collected: 04/30/18 10:20

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.94		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 23:03	1
Arsenic, Dissolved	0.029		0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 23:03	1
Boron, Dissolved	0.27		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 23:03	1
Calcium, Dissolved	44		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:03	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 23:03	1
Magnesium, Dissolved	0.082	J	0.20	0.043	mg/L		05/08/18 08:31	05/10/18 23:03	1
Manganese, Dissolved	0.0013	J B	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 23:03	1
Molybdenum, Dissolved	0.29		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 23:03	1
Potassium, Dissolved	18		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:03	1
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 23:03	1
Sodium, Dissolved	2.3		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 23:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/05/18 01:10	1
Sulfate, Dissolved	40		2.0	0.35	mg/L			05/05/18 01:10	1
Dissolved Organic Carbon	2.7	B	1.0	0.43	mg/L			05/11/18 14:02	1
Alkalinity, Dissolved	94		5.0	0.79	mg/L			05/03/18 14:32	1
Total Dissolved Solids	130		10	4.0	mg/L			05/07/18 13:54	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-CC3-28D

Lab Sample ID: 480-135145-4

Date Collected: 04/30/18 10:30

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.3		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 23:18	1
Arsenic, Dissolved	0.034		0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 23:18	1
Boron, Dissolved	0.36		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 23:18	1
Calcium, Dissolved	39		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:18	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 23:18	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 23:18	1
Manganese, Dissolved	0.00096	J B ^	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 23:18	1
Molybdenum, Dissolved	0.82		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 23:18	1
Potassium, Dissolved	8.2		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:18	1
Selenium, Dissolved	0.019	J	0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 23:18	1
Sodium, Dissolved	1.8		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 23:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	1.6		1.0	0.56	mg/L			05/05/18 01:18	2
Sulfate, Dissolved	22		4.0	0.70	mg/L			05/05/18 01:18	2
Dissolved Organic Carbon	4.6	B	1.0	0.43	mg/L			05/11/18 03:04	1
Alkalinity, Dissolved	90		5.0	0.79	mg/L			05/03/18 14:38	1
Total Dissolved Solids	120		10	4.0	mg/L			05/07/18 13:54	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-PC3HLDM-28D

Lab Sample ID: 480-135145-5

Date Collected: 04/30/18 10:40

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	3.1		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 23:22	1
Arsenic, Dissolved	0.0068	J	0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 23:22	1
Boron, Dissolved	0.16		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 23:22	1
Calcium, Dissolved	100		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:22	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 23:22	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 23:22	1
Manganese, Dissolved	0.00088	J B ^	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 23:22	1
Molybdenum, Dissolved	0.40		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 23:22	1
Potassium, Dissolved	18		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:22	1
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 23:22	1
Sodium, Dissolved	2.4		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 23:22	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			05/05/18 02:07	5
Sulfate, Dissolved	2.9	J	10	1.7	mg/L			05/05/18 02:07	5
Dissolved Organic Carbon	3.4	B	1.0	0.43	mg/L			05/11/18 04:00	1
Alkalinity, Dissolved	270		5.0	0.79	mg/L			05/03/18 14:46	1
Total Dissolved Solids	240		10	4.0	mg/L			05/07/18 13:54	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Client Sample ID: 1315-BLANK-28D

Lab Sample ID: 480-135145-6

Date Collected: 04/30/18 10:50

Matrix: Water

Date Received: 05/01/18 10:45

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 23:26	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 23:26	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 23:26	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:26	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 23:26	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 23:26	1
Manganese, Dissolved	0.00076	J B ^	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 23:26	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 23:26	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 23:26	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 23:26	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 23:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/05/18 02:15	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/05/18 02:15	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			05/11/18 04:54	1
Alkalinity, Dissolved	1.9	J	5.0	0.79	mg/L			05/03/18 14:53	1
Total Dissolved Solids	ND		10	4.0	mg/L			05/07/18 13:54	1

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-412987/1-A
Matrix: Water
Analysis Batch: 413801

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 412987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/08/18 08:31	05/10/18 21:15	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/08/18 08:31	05/10/18 21:15	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		05/08/18 08:31	05/10/18 21:15	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 21:15	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/08/18 08:31	05/10/18 21:15	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/08/18 08:31	05/10/18 21:15	1
Manganese, Dissolved	0.00132	J	0.0030	0.00040	mg/L		05/08/18 08:31	05/10/18 21:15	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/08/18 08:31	05/10/18 21:15	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		05/08/18 08:31	05/10/18 21:15	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/08/18 08:31	05/10/18 21:15	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/08/18 08:31	05/10/18 21:15	1

Lab Sample ID: LCS 480-412987/2-A
Matrix: Water
Analysis Batch: 413801

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 412987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	10.4		mg/L		104	80 - 120
Arsenic, Dissolved	0.200	0.211		mg/L		105	80 - 120
Boron, Dissolved	0.200	0.211		mg/L		105	80 - 120
Calcium, Dissolved	10.0	10.5		mg/L		105	80 - 120
Iron, Dissolved	10.0	11.2		mg/L		112	80 - 120
Magnesium, Dissolved	10.0	10.6		mg/L		106	80 - 120
Manganese, Dissolved	0.200	0.220		mg/L		110	80 - 120
Molybdenum, Dissolved	0.200	0.211		mg/L		105	80 - 120
Potassium, Dissolved	10.0	10.8		mg/L		108	80 - 120
Selenium, Dissolved	0.200	0.204		mg/L		102	80 - 120
Sodium, Dissolved	10.0	10.7		mg/L		107	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-412673/28
Matrix: Water
Analysis Batch: 412673

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/05/18 01:59	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/05/18 01:59	1

Lab Sample ID: MB 480-412673/4
Matrix: Water
Analysis Batch: 412673

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/04/18 22:43	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/04/18 22:43	1

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-412673/27
Matrix: Water
Analysis Batch: 412673

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	52.7		mg/L		105	90 - 110
Sulfate, Dissolved	50.0	53.6		mg/L		107	90 - 110

Lab Sample ID: LCS 480-412673/3
Matrix: Water
Analysis Batch: 412673

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	52.6		mg/L		105	90 - 110
Sulfate, Dissolved	50.0	54.1		mg/L		108	90 - 110

Lab Sample ID: 480-135145-4 MS
Matrix: Water
Analysis Batch: 412673

Client Sample ID: 1315-CC3-28D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	1.6		100	110		mg/L		108	81 - 120
Sulfate, Dissolved	22		100	135		mg/L		113	80 - 120

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-413771/4
Matrix: Water
Analysis Batch: 413771

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.571	J	1.0	0.43	mg/L			05/10/18 21:38	1

Lab Sample ID: LCS 480-413771/5
Matrix: Water
Analysis Batch: 413771

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	59.2		mg/L		99	90 - 110

Lab Sample ID: 480-135145-4 MS
Matrix: Water
Analysis Batch: 413771

Client Sample ID: 1315-CC3-28D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	4.6	B	20.0	25.0		mg/L		102	54 - 131

Lab Sample ID: 480-135145-5 DU
Matrix: Water
Analysis Batch: 413771

Client Sample ID: 1315-PC3HLD-28D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	3.4	B	3.49		mg/L		3	20

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-412508/30
Matrix: Water
Analysis Batch: 412508

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/03/18 15:49	1

Lab Sample ID: MB 480-412508/7
Matrix: Water
Analysis Batch: 412508

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/03/18 13:03	1

Lab Sample ID: LCS 480-412508/31
Matrix: Water
Analysis Batch: 412508

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	98.6		mg/L		99	90 - 110

Lab Sample ID: LCS 480-412508/8
Matrix: Water
Analysis Batch: 412508

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	98.8		mg/L		99	90 - 110

Lab Sample ID: 480-135145-1 MS
Matrix: Water
Analysis Batch: 412508

Client Sample ID: 1315-PC3-28D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	150	F1	100	188	F1	mg/L		42	60 - 140

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-412947/1
Matrix: Water
Analysis Batch: 412947

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			05/07/18 13:54	1

Lab Sample ID: LCS 480-412947/2
Matrix: Water
Analysis Batch: 412947

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	523	489		mg/L		94	85 - 115

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

Metals

Prep Batch: 412987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	3005A	
480-135145-2	1315-PC6-28D	Dissolved	Water	3005A	
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	3005A	
480-135145-4	1315-CC3-28D	Dissolved	Water	3005A	
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	3005A	
480-135145-6	1315-BLANK-28D	Dissolved	Water	3005A	
MB 480-412987/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-412987/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 413801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	6010C	412987
480-135145-2	1315-PC6-28D	Dissolved	Water	6010C	412987
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	6010C	412987
480-135145-4	1315-CC3-28D	Dissolved	Water	6010C	412987
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	6010C	412987
480-135145-6	1315-BLANK-28D	Dissolved	Water	6010C	412987
MB 480-412987/1-A	Method Blank	Total Recoverable	Water	6010C	412987
LCS 480-412987/2-A	Lab Control Sample	Total Recoverable	Water	6010C	412987

General Chemistry

Analysis Batch: 412508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	SM 2320B	
480-135145-2	1315-PC6-28D	Dissolved	Water	SM 2320B	
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	SM 2320B	
480-135145-4	1315-CC3-28D	Dissolved	Water	SM 2320B	
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	SM 2320B	
480-135145-6	1315-BLANK-28D	Dissolved	Water	SM 2320B	
MB 480-412508/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-412508/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-412508/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-412508/8	Lab Control Sample	Total/NA	Water	SM 2320B	
480-135145-1 MS	1315-PC3-28D	Dissolved	Water	SM 2320B	

Analysis Batch: 412673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	9056A	
480-135145-2	1315-PC6-28D	Dissolved	Water	9056A	
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	9056A	
480-135145-4	1315-CC3-28D	Dissolved	Water	9056A	
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	9056A	
480-135145-6	1315-BLANK-28D	Dissolved	Water	9056A	
MB 480-412673/28	Method Blank	Total/NA	Water	9056A	
MB 480-412673/4	Method Blank	Total/NA	Water	9056A	
LCS 480-412673/27	Lab Control Sample	Total/NA	Water	9056A	
LCS 480-412673/3	Lab Control Sample	Total/NA	Water	9056A	
480-135145-4 MS	1315-CC3-28D	Dissolved	Water	9056A	

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

General Chemistry (Continued)

Analysis Batch: 412947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	SM 2540C	
480-135145-2	1315-PC6-28D	Dissolved	Water	SM 2540C	
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	SM 2540C	
480-135145-4	1315-CC3-28D	Dissolved	Water	SM 2540C	
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	SM 2540C	
480-135145-6	1315-BLANK-28D	Dissolved	Water	SM 2540C	
MB 480-412947/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-412947/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 413771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135145-1	1315-PC3-28D	Dissolved	Water	9060A	
480-135145-2	1315-PC6-28D	Dissolved	Water	9060A	
480-135145-3	1315-PC3FS1-28D	Dissolved	Water	9060A	
480-135145-4	1315-CC3-28D	Dissolved	Water	9060A	
480-135145-5	1315-PC3HLDM-28D	Dissolved	Water	9060A	
480-135145-6	1315-BLANK-28D	Dissolved	Water	9060A	
MB 480-413771/4	Method Blank	Dissolved	Water	9060A	
LCS 480-413771/5	Lab Control Sample	Dissolved	Water	9060A	
480-135145-4 MS	1315-CC3-28D	Dissolved	Water	9060A	
480-135145-5 DU	1315-PC3HLDM-28D	Dissolved	Water	9060A	

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135145-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY



480-135145 COC

DATE: 4/30/18

COC #: _____

PAGE: 1 OF 1

Project Name: Bailly Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information							Methods for Analysis					RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Dis. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1315-PC3-28D	4/30/18 1000	W	FS	N	X	X	X	X	X				X		
2	1315-PC6-28D	↓ 1010	↓	↓	↓	X	X	X	X	X				X		
3	1315-PC3FS1-28D	↓ 1020	↓	↓	↓	X	X	X	X	X				X		
4	1315-CC3-28D	↓ 1030	↓	↓	↓	X	X	X	X	X				X		
5	1315-PC3HLDN-28D	↓ 1040	↓	↓	↓	X	X	X	X	X				X		
6	1315-BLANK-28D	↓ 1050	↓	↓	↓	X	X	X	X	X				X		
7																
8																
9																
10																
11																
12																

Sampler's Signature: <i>Jonecia Bradley</i>	Date: 4/30/18	Time: 1100	For Lab Use	Comments: X=Analyze H=Hold Analysis Request Standard TAT Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: <i>Jonecia Bradley</i>	Date: 4/30/18	Time: 1445	Does COC match samples: Y or N	
Received By: <i>[Signature]</i>	Date: 4-30-18	Time: 1945	Broken Container: Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 4-30-18	Time: 1530	COC seal intact: Y or N	
Received By: <i>[Signature]</i>	Date: 4/30/18	Time: 1045	Other problems: Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 4/30/18	Time: 1045	WSDOT contacted: Y or N	Cooler Temperature at receipt: 21.6 °C
Received By (LAB):	Date:	Time:	Date contacted:	



Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-135145-1

Login Number: 135145

List Number: 1

Creator: Kolb, Chris M

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



Reviewed 05/29/2018 THE LEADER IN ENVIRONMENTAL TESTING
Elizabeth Penta
Wood. PLC

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-135146-1

Client Project/Site: Bailly Treatability Study
Revision: 1

For:

Wood E&I Solutions Inc
271 Mill Road
Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

6/4/2018 4:11:30 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.



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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-135146-1	1312-PC3-56D	Solid	04/30/18 10:45	05/01/18 10:45
480-135146-2	1312-PC6-56D	Solid	04/30/18 10:50	05/01/18 10:45
480-135146-3	1312-PC3FS1-56D	Solid	04/30/18 10:55	05/01/18 10:45
480-135146-4	1312-CC3-56D	Solid	04/30/18 11:00	05/01/18 10:45
480-135146-5	1312-PC3HLDM-56D	Solid	04/30/18 11:05	05/01/18 10:45

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

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
1312	SPLP Extraction	SW846	TAL BUF
3010A	Preparation, Total Metals	SW846	TAL BUF

Protocol References:

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



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Qualifiers

Metals

Qualifier	Qualifier Description
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.
B	Compound was found in the blank and sample.

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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Job ID: 480-135146-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-135146-1**

Revision

This report has been revised to correct a sample ID.

Receipt

The samples were received on 5/1/2018 10:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

Metals

Method(s) 6010C: Sodium and Aluminum are elevated in the Leachate Blank, LB 480-413629. Due to the possibility of Sodium and Aluminum being trace elements in the SPLP fluid, the data has been qualified and reported.

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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC3-56D

Lab Sample ID: 480-135146-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	4.3		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.016		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.34	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	74		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.069		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.5		1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-56D

Lab Sample ID: 480-135146-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	5.0	B	0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.011	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.31	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	92		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	32		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.052		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	6.0	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-56D

Lab Sample ID: 480-135146-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.0	B	0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.031		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.37	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	58		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	8.5		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.070		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.8	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-56D

Lab Sample ID: 480-135146-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1.4	B	0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.020		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.34	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	63		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.82		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	24		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.047		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.8	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-56D

Lab Sample ID: 480-135146-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3.2	B	0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.0073	J	0.015	0.0056	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC3HLDM-56D (Continued)

Lab Sample ID: 480-135146-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.13	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	150		3.0	1.0	mg/L	1		6010C	SPLP East
Iron	0.086	J	0.10	0.050	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	16		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.049		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.9	B	1.0	0.32	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC3-56D

Lab Sample ID: 480-135146-1

Date Collected: 04/30/18 10:45

Matrix: Solid

Date Received: 05/01/18 10:45

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4.3		0.20	0.060	mg/L		05/11/18 10:08	05/11/18 23:41	1
Arsenic	0.016		0.015	0.0056	mg/L		05/11/18 10:08	05/11/18 23:41	1
Boron	0.34	J	0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:41	1
Calcium	74		3.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:41	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/11/18 23:41	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:41	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/11/18 23:41	1
Molybdenum	1.2		0.010	0.0036	mg/L		05/11/18 10:08	05/11/18 23:41	1
Potassium	13		2.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:41	1
Selenium	0.069		0.025	0.0087	mg/L		05/11/18 10:08	05/11/18 23:41	1
Sodium	3.5		1.0	0.32	mg/L		05/11/18 10:08	05/11/18 23:41	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC6-56D

Lab Sample ID: 480-135146-2

Date Collected: 04/30/18 10:50

Matrix: Solid

Date Received: 05/01/18 10:45

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5.0	B	0.20	0.060	mg/L		05/11/18 10:08	05/11/18 23:59	1
Arsenic	0.011	J	0.015	0.0056	mg/L		05/11/18 10:08	05/11/18 23:59	1
Boron	0.31	J	0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:59	1
Calcium	92		3.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:59	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/11/18 23:59	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:59	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/11/18 23:59	1
Molybdenum	1.2		0.010	0.0036	mg/L		05/11/18 10:08	05/11/18 23:59	1
Potassium	32		2.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:59	1
Selenium	0.052		0.025	0.0087	mg/L		05/11/18 10:08	05/11/18 23:59	1
Sodium	6.0	B	1.0	0.32	mg/L		05/11/18 10:08	05/11/18 23:59	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC3FS1-56D

Lab Sample ID: 480-135146-3

Date Collected: 04/30/18 10:55

Matrix: Solid

Date Received: 05/01/18 10:45

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.0	B	0.20	0.060	mg/L		05/11/18 10:08	05/12/18 00:03	1
Arsenic	0.031		0.015	0.0056	mg/L		05/11/18 10:08	05/12/18 00:03	1
Boron	0.37	J	0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:03	1
Calcium	58		3.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:03	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/12/18 00:03	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:03	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/12/18 00:03	1
Molybdenum	1.1		0.010	0.0036	mg/L		05/11/18 10:08	05/12/18 00:03	1
Potassium	8.5		2.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:03	1
Selenium	0.070		0.025	0.0087	mg/L		05/11/18 10:08	05/12/18 00:03	1
Sodium	3.8	B	1.0	0.32	mg/L		05/11/18 10:08	05/12/18 00:03	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-CC3-56D

Lab Sample ID: 480-135146-4

Date Collected: 04/30/18 11:00

Matrix: Solid

Date Received: 05/01/18 10:45

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.4	B	0.20	0.060	mg/L		05/11/18 10:08	05/12/18 00:07	1
Arsenic	0.020		0.015	0.0056	mg/L		05/11/18 10:08	05/12/18 00:07	1
Boron	0.34	J	0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:07	1
Calcium	63		3.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:07	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/12/18 00:07	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:07	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/12/18 00:07	1
Molybdenum	0.82		0.010	0.0036	mg/L		05/11/18 10:08	05/12/18 00:07	1
Potassium	24		2.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:07	1
Selenium	0.047		0.025	0.0087	mg/L		05/11/18 10:08	05/12/18 00:07	1
Sodium	3.8	B	1.0	0.32	mg/L		05/11/18 10:08	05/12/18 00:07	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Client Sample ID: 1312-PC3HLDM-56D

Lab Sample ID: 480-135146-5

Date Collected: 04/30/18 11:05

Matrix: Solid

Date Received: 05/01/18 10:45

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.2	B	0.20	0.060	mg/L		05/11/18 10:08	05/12/18 00:10	1
Arsenic	0.0073	J	0.015	0.0056	mg/L		05/11/18 10:08	05/12/18 00:10	1
Boron	0.13	J	0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:10	1
Calcium	150		3.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:10	1
Iron	0.086	J	0.10	0.050	mg/L		05/11/18 10:08	05/12/18 00:10	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/12/18 00:10	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/12/18 00:10	1
Molybdenum	1.2		0.010	0.0036	mg/L		05/11/18 10:08	05/12/18 00:10	1
Potassium	16		2.0	1.0	mg/L		05/11/18 10:08	05/12/18 00:10	1
Selenium	0.049		0.025	0.0087	mg/L		05/11/18 10:08	05/12/18 00:10	1
Sodium	3.9	B	1.0	0.32	mg/L		05/11/18 10:08	05/12/18 00:10	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-413824/2-A
Matrix: Solid
Analysis Batch: 414099

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		05/11/18 10:08	05/11/18 23:22	1
Arsenic	ND		0.015	0.0056	mg/L		05/11/18 10:08	05/11/18 23:22	1
Boron	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:22	1
Calcium	ND		3.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:22	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/11/18 23:22	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:22	1
Manganese	ND		0.010	0.0050	mg/L		05/11/18 10:08	05/11/18 23:22	1
Molybdenum	ND		0.010	0.0036	mg/L		05/11/18 10:08	05/11/18 23:22	1
Potassium	ND		2.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:22	1
Selenium	ND		0.025	0.0087	mg/L		05/11/18 10:08	05/11/18 23:22	1
Sodium	ND		1.0	0.32	mg/L		05/11/18 10:08	05/11/18 23:22	1

Lab Sample ID: LCS 480-413824/3-A
Matrix: Solid
Analysis Batch: 414099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10.0	8.71		mg/L		87	80 - 120
Arsenic	1.20	1.09		mg/L		91	80 - 120
Boron	0.200	0.184	J	mg/L		92	80 - 120
Calcium	10.0	9.23		mg/L		92	80 - 120
Iron	10.0	9.37		mg/L		94	80 - 120
Magnesium	10.0	8.93		mg/L		89	80 - 120
Manganese	1.20	1.15		mg/L		96	80 - 120
Molybdenum	1.20	1.11		mg/L		92	80 - 120
Potassium	10.0	9.23		mg/L		92	80 - 120
Selenium	1.20	1.08		mg/L		90	80 - 120
Sodium	10.0	11.2		mg/L		112	80 - 120

Lab Sample ID: LB 480-413629/1-B
Matrix: Solid
Analysis Batch: 414099

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 413824

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.36		0.20	0.060	mg/L		05/11/18 10:08	05/11/18 23:19	1
Arsenic	ND		0.015	0.0056	mg/L		05/11/18 10:08	05/11/18 23:19	1
Boron	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:19	1
Calcium	ND		3.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:19	1
Iron	ND		0.10	0.050	mg/L		05/11/18 10:08	05/11/18 23:19	1
Magnesium	ND		0.50	0.10	mg/L		05/11/18 10:08	05/11/18 23:19	1
Manganese	0.00773	J	0.010	0.0050	mg/L		05/11/18 10:08	05/11/18 23:19	1
Molybdenum	ND		0.010	0.0036	mg/L		05/11/18 10:08	05/11/18 23:19	1
Potassium	ND		2.0	1.0	mg/L		05/11/18 10:08	05/11/18 23:19	1
Selenium	ND		0.025	0.0087	mg/L		05/11/18 10:08	05/11/18 23:19	1
Sodium	2.06		1.0	0.32	mg/L		05/11/18 10:08	05/11/18 23:19	1

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

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

Lab Sample ID: 480-135146-1 MS

Matrix: Solid

Analysis Batch: 414099

Client Sample ID: 1312-PC3-56D

Prep Type: SPLP East

Prep Batch: 413824

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Aluminum	4.3		10.0	13.2		mg/L		88	75 - 125
Arsenic	0.016		1.20	1.15		mg/L		95	75 - 125
Boron	0.34	J	0.200	0.512		mg/L		88	75 - 125
Calcium	74		10.0	82.4	4	mg/L		85	75 - 125
Iron	ND		10.0	9.45		mg/L		95	75 - 125
Magnesium	ND		10.0	9.03		mg/L		90	75 - 125
Manganese	ND		1.20	1.16		mg/L		97	75 - 125
Molybdenum	1.2		1.20	2.30		mg/L		94	75 - 125
Potassium	13		10.0	22.1		mg/L		92	75 - 125
Selenium	0.069		1.20	1.17		mg/L		91	75 - 125
Sodium	3.5		10.0	12.8		mg/L		93	75 - 125

Lab Sample ID: 480-135146-1 MSD

Matrix: Solid

Analysis Batch: 414099

Client Sample ID: 1312-PC3-56D

Prep Type: SPLP East

Prep Batch: 413824

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier					RPD	Limit
Aluminum	4.3		10.0	12.8		mg/L		84	75 - 125	3	20
Arsenic	0.016		1.20	1.13		mg/L		92	75 - 125	2	20
Boron	0.34	J	0.200	0.506		mg/L		85	75 - 125	1	20
Calcium	74		10.0	80.4	4	mg/L		65	75 - 125	2	20
Iron	ND		10.0	9.28		mg/L		93	75 - 125	2	20
Magnesium	ND		10.0	8.84		mg/L		88	75 - 125	2	20
Manganese	ND		1.20	1.14		mg/L		95	75 - 125	2	20
Molybdenum	1.2		1.20	2.24		mg/L		90	75 - 125	2	20
Potassium	13		10.0	21.6		mg/L		87	75 - 125	2	20
Selenium	0.069		1.20	1.14		mg/L		89	75 - 125	2	20
Sodium	3.5		10.0	12.4		mg/L		89	75 - 125	3	20

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

Metals

Leach Batch: 413629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135146-1	1312-PC3-56D	SPLP East	Solid	1312	
480-135146-2	1312-PC6-56D	SPLP East	Solid	1312	
480-135146-3	1312-PC3FS1-56D	SPLP East	Solid	1312	
480-135146-4	1312-CC3-56D	SPLP East	Solid	1312	
480-135146-5	1312-PC3HLDM-56D	SPLP East	Solid	1312	
LB 480-413629/1-B	Method Blank	SPLP East	Solid	1312	
480-135146-1 MS	1312-PC3-56D	SPLP East	Solid	1312	
480-135146-1 MSD	1312-PC3-56D	SPLP East	Solid	1312	

Prep Batch: 413824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135146-1	1312-PC3-56D	SPLP East	Solid	3010A	413629
480-135146-2	1312-PC6-56D	SPLP East	Solid	3010A	413629
480-135146-3	1312-PC3FS1-56D	SPLP East	Solid	3010A	413629
480-135146-4	1312-CC3-56D	SPLP East	Solid	3010A	413629
480-135146-5	1312-PC3HLDM-56D	SPLP East	Solid	3010A	413629
LB 480-413629/1-B	Method Blank	SPLP East	Solid	3010A	413629
MB 480-413824/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-413824/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-135146-1 MS	1312-PC3-56D	SPLP East	Solid	3010A	413629
480-135146-1 MSD	1312-PC3-56D	SPLP East	Solid	3010A	413629

Analysis Batch: 414099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135146-1	1312-PC3-56D	SPLP East	Solid	6010C	413824
480-135146-2	1312-PC6-56D	SPLP East	Solid	6010C	413824
480-135146-3	1312-PC3FS1-56D	SPLP East	Solid	6010C	413824
480-135146-4	1312-CC3-56D	SPLP East	Solid	6010C	413824
480-135146-5	1312-PC3HLDM-56D	SPLP East	Solid	6010C	413824
LB 480-413629/1-B	Method Blank	SPLP East	Solid	6010C	413824
MB 480-413824/2-A	Method Blank	Total/NA	Solid	6010C	413824
LCS 480-413824/3-A	Lab Control Sample	Total/NA	Solid	6010C	413824
480-135146-1 MS	1312-PC3-56D	SPLP East	Solid	6010C	413824
480-135146-1 MSD	1312-PC3-56D	SPLP East	Solid	6010C	413824

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135146-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

SHIP TO:
TestAmerica
10 Hazelwood Drive
Amherst, NY 14228
(716) 504-9838

CHAIN OF CUSTODY

DATE

COC #

PAG



480-135146 COC

Disposal Instruct
Shipment Method:
Waybill Number: N/A

Project Name:	Bailly Treatability Study	Project Contact:	Denise King	Bill To:	NiSource	Disposal Instruct	
Project Number:	377882016	Phone Number:	978-392-5339			Shipment Method:	
Project Manager:	Russell Johnson	Project Phase:	2400			Waybill Number:	N/A

Sample Information							Methods for Analysis										RUSH					
No.	Sample ID	Date & Time Sampled		Matrix	Sample Type	MS/MSD	*SPLP Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)										1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1312-PC3-56D	4/30/18	1045	S	FS	N	X															
2	1312-PC6-56D		1050				X															
3	1312-PC3PS1-56D		1055				X															
4	1312-CC3-56D		1100				X															
5	1312-PC3HLDM-56D		1105				X															
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Sampler's Signature:	<i>Jamecia Bradley</i>	Date:	4/30/18	Time:	1110	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT - Need results by 4/16/2018 Shipped from Kemron - Atlanta GA *Please perform a lab duplicate analysis for each sample for SPLP metals only (not all other wet chem parameters). NUMBER OF COOLERS SENT:
Relinquished By/Affiliation:	<i>Jamecia Bradley</i>	Date:	4/30/18	Time:	1445	Does COC match samples:	Y or N	
Received By:	<i>[Signature]</i>	Date:	4/30/18	Time:	1945	Broken Container:	Y or N	
Relinquished By/Affiliation:	<i>[Signature]</i>	Date:	4-30-18	Time:	1530	COC seal intact:	Y or N	
Received By:	<i>[Signature]</i>	Date:	5/1/18	Time:	1045	Other problems:	Y or N	
Relinquished By/Affiliation:		Date:		Time:		WSDOT contacted:	Y or N	
Received By (LAB):		Date:		Time:		Date contacted:		
						Cooler Temperature at receipt:	2.6 °C	
							#1	

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-135146-1

Login Number: 135146

List Number: 1

Creator: Harper, Marcus D

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



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: 480-135906-1

Client Project/Site: Bailly Treatability Study

For:

Wood E&I Solutions Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

6/5/2018 11:06:57 AM

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com



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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.

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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-135906-1	1315-PC3-42D	Water	05/14/18 10:00	05/15/18 10:30
480-135906-2	1315-PC6-42D	Water	05/14/18 10:15	05/15/18 10:30
480-135906-3	1315-PC3FS1-42D	Water	05/14/18 10:30	05/15/18 10:30
480-135906-4	1315-CC3-42D	Water	05/14/18 10:45	05/15/18 10:30
480-135906-5	1315-PC3HLDM-42D	Water	05/14/18 11:00	05/15/18 10:30
480-135906-6	1315-BLANK-42D	Water	05/14/18 11:15	05/15/18 10:30

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

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Job ID: 480-135906-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-135906-1**

Comments

No additional comments.

Receipt

The samples were received on 5/15/2018 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

HPLC/IC

Method(s) 9056A: The following samples were reported with elevated reporting limits for all analytes: 1315-PC6-42D (480-135906-2) and 1315-PC3HLDM-42D (480-135906-5). The sample was analyzed at a dilution based on screening results.

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

Metals

Method(s) 6010, 6010C: The Method Blank for preparation batch 480-414714 contained Dissolved Iron above the reporting limit (RL). None of the associated 1315-PC6-42D (480-135906-2), 1315-PC3FS1-42D (480-135906-3) and 1315-PC3HLDM-42D (480-135906-5) associated with this Method Blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method(s) 6010C: The low level continuing calibration verification (CCVL 480-415117/19) recovered above the upper control limit for Dissolved Potassium. The samples associated with this CCVL were either less than the reporting limit (RL) for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples (LCS 480-414714/2-A) and (MB 480-414714/1-A) was not performed.

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

General Chemistry

Method(s) SM 2320B: The following sample(s) was received with headspace in the sample container: 1315-PC6-42D (480-135906-2), 1315-PC3FS1-42D (480-135906-3), 1315-CC3-42D (480-135906-4), 1315-PC3HLDM-42D (480-135906-5) and 1315-BLANK-42D (480-135906-6).

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

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-PC3-42D

Lab Sample ID: 480-135906-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.2		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.021		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.38	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	31		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.060	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00060	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.64		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	14	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.1		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	8.2	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	4.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	91		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-42D

Lab Sample ID: 480-135906-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	3.0		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0097	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.31	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	47		0.50	0.10	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00049	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.64		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	22	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	3.0		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	9.6	B	4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	140		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	150		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-42D

Lab Sample ID: 480-135906-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.94		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.034		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.29	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	38		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.091	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00075	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.22		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	13	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.7		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	33	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	85		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	160		10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-CC3-42D

Lab Sample ID: 480-135906-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.8		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.043		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.36	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	28		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.048	J	0.20	0.043	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.00064	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.50		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	6.4	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.016	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.4		1.0	0.32	mg/L	1		6010C	Dissolved
Chloride, Dissolved	0.39	J	0.50	0.28	mg/L	1		9056A	Dissolved
Sulfate, Dissolved	22	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	4.0	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	62		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	120		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-42D

Lab Sample ID: 480-135906-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	3.4		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0092	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.19	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	74		0.50	0.10	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.37		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	16	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.013	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.2		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	7.6	J B	10	1.7	mg/L	5		9056A	Dissolved
Dissolved Organic Carbon	3.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	200		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	230		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-42D

Lab Sample ID: 480-135906-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	0.0019	J B	0.0030	0.00040	mg/L	1		6010C	Dissolved
Total Dissolved Solids	7.0	J	10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-PC3-42D

Lab Sample ID: 480-135906-1

Date Collected: 05/14/18 10:00

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.2		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:23	1
Arsenic, Dissolved	0.021		0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:23	1
Boron, Dissolved	0.38	B	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:23	1
Calcium, Dissolved	31		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:23	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/22/18 09:05	05/23/18 03:27	1
Magnesium, Dissolved	0.060	J	0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:23	1
Manganese, Dissolved	0.00060	J B	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:23	1
Molybdenum, Dissolved	0.64		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:23	1
Potassium, Dissolved	14	B	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:23	1
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:23	1
Sodium, Dissolved	2.1		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:23	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/17/18 18:17	1
Sulfate, Dissolved	8.2	B	2.0	0.35	mg/L			05/17/18 18:17	1
Dissolved Organic Carbon	4.8	B	1.0	0.43	mg/L			05/25/18 08:47	1
Alkalinity, Dissolved	91		5.0	0.79	mg/L			05/24/18 21:35	1
Total Dissolved Solids	130		10	4.0	mg/L			05/21/18 16:52	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-PC6-42D

Lab Sample ID: 480-135906-2

Date Collected: 05/14/18 10:15

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	3.0		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:38	1
Arsenic, Dissolved	0.0097	J	0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:38	1
Boron, Dissolved	0.31	B	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:38	1
Calcium, Dissolved	47		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:38	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/17/18 10:30	05/18/18 03:38	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:38	1
Manganese, Dissolved	0.00049	J B	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:38	1
Molybdenum, Dissolved	0.64		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:38	1
Potassium, Dissolved	22	B	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:38	1
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:38	1
Sodium, Dissolved	3.0		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:38	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			05/17/18 18:32	2
Sulfate, Dissolved	9.6	B	4.0	0.70	mg/L			05/17/18 18:32	2
Dissolved Organic Carbon	4.8	B	1.0	0.43	mg/L			05/25/18 09:15	1
Alkalinity, Dissolved	140		5.0	0.79	mg/L			05/24/18 21:43	1
Total Dissolved Solids	150		10	4.0	mg/L			05/21/18 16:52	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-PC3FS1-42D

Lab Sample ID: 480-135906-3

Date Collected: 05/14/18 10:30

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.94		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:41	1
Arsenic, Dissolved	0.034		0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:41	1
Boron, Dissolved	0.29	B	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:41	1
Calcium, Dissolved	38		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:41	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/17/18 10:30	05/18/18 03:41	1
Magnesium, Dissolved	0.091	J	0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:41	1
Manganese, Dissolved	0.00075	J B	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:41	1
Molybdenum, Dissolved	0.22		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:41	1
Potassium, Dissolved	13	B	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:41	1
Selenium, Dissolved	0.014	J	0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:41	1
Sodium, Dissolved	1.7		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:41	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/17/18 18:46	1
Sulfate, Dissolved	33	B	2.0	0.35	mg/L			05/17/18 18:46	1
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L			05/25/18 09:42	1
Alkalinity, Dissolved	85		5.0	0.79	mg/L			05/24/18 21:52	1
Total Dissolved Solids	160		10	4.0	mg/L			05/21/18 16:52	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-CC3-42D

Lab Sample ID: 480-135906-4

Date Collected: 05/14/18 10:45

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.8		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:45	1
Arsenic, Dissolved	0.043		0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:45	1
Boron, Dissolved	0.36	B	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:45	1
Calcium, Dissolved	28		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:45	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/22/18 09:05	05/23/18 03:30	1
Magnesium, Dissolved	0.048	J	0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:45	1
Manganese, Dissolved	0.00064	J B	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:45	1
Molybdenum, Dissolved	0.50		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:45	1
Potassium, Dissolved	6.4	B	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:45	1
Selenium, Dissolved	0.016	J	0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:45	1
Sodium, Dissolved	1.4		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:45	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	0.39	J	0.50	0.28	mg/L			05/17/18 19:01	1
Sulfate, Dissolved	22	B	2.0	0.35	mg/L			05/17/18 19:01	1
Dissolved Organic Carbon	4.0	B	1.0	0.43	mg/L			05/25/18 11:06	1
Alkalinity, Dissolved	62		5.0	0.79	mg/L			05/24/18 22:24	1
Total Dissolved Solids	120		10	4.0	mg/L			05/21/18 16:52	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-PC3HLDM-42D

Lab Sample ID: 480-135906-5

Date Collected: 05/14/18 11:00

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	3.4		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:49	1
Arsenic, Dissolved	0.0092	J	0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:49	1
Boron, Dissolved	0.19	B	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:49	1
Calcium, Dissolved	74		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:49	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/17/18 10:30	05/18/18 03:49	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:49	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:49	1
Molybdenum, Dissolved	0.37		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:49	1
Potassium, Dissolved	16	B	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:49	1
Selenium, Dissolved	0.013	J	0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:49	1
Sodium, Dissolved	2.2		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:49	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		2.5	1.4	mg/L			05/17/18 19:15	5
Sulfate, Dissolved	7.6	J B	10	1.7	mg/L			05/17/18 19:15	5
Dissolved Organic Carbon	3.4	B	1.0	0.43	mg/L			05/25/18 11:34	1
Alkalinity, Dissolved	200		5.0	0.79	mg/L			05/25/18 14:55	1
Total Dissolved Solids	230		10	4.0	mg/L			05/21/18 16:52	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Client Sample ID: 1315-BLANK-42D

Lab Sample ID: 480-135906-6

Date Collected: 05/14/18 11:15

Matrix: Water

Date Received: 05/15/18 10:30

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 03:53	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 03:53	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 03:53	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:53	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/22/18 09:05	05/23/18 03:59	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/17/18 10:30	05/18/18 03:53	1
Manganese, Dissolved	0.0019	J B	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 03:53	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 03:53	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 03:53	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 03:53	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 03:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/17/18 19:30	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/17/18 19:30	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			05/25/18 12:01	1
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/24/18 22:54	1
Total Dissolved Solids	7.0	J	10	4.0	mg/L			05/21/18 16:52	1

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-414714/1-A
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 414714

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/17/18 10:30	05/18/18 02:14	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/17/18 10:30	05/18/18 02:14	1
Boron, Dissolved	0.00572	J	0.020	0.0040	mg/L		05/17/18 10:30	05/18/18 02:14	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/17/18 10:30	05/18/18 02:14	1
Iron, Dissolved	0.208		0.050	0.019	mg/L		05/17/18 10:30	05/18/18 02:14	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/17/18 10:30	05/18/18 02:14	1
Manganese, Dissolved	0.00194	J	0.0030	0.00040	mg/L		05/17/18 10:30	05/18/18 02:14	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/17/18 10:30	05/18/18 02:14	1
Potassium, Dissolved	0.162	J ^	0.50	0.10	mg/L		05/17/18 10:30	05/18/18 02:14	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/17/18 10:30	05/18/18 02:14	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/17/18 10:30	05/18/18 02:14	1

Lab Sample ID: LCS 480-414714/2-A
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 414714

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	9.42		mg/L		94	80 - 120
Arsenic, Dissolved	0.200	0.196		mg/L		98	80 - 120
Boron, Dissolved	0.200	0.191		mg/L		95	80 - 120
Calcium, Dissolved	10.0	9.83		mg/L		98	80 - 120
Iron, Dissolved	10.0	10.2		mg/L		102	80 - 120
Magnesium, Dissolved	10.0	9.66		mg/L		97	80 - 120
Manganese, Dissolved	0.200	0.204		mg/L		102	80 - 120
Molybdenum, Dissolved	0.200	0.200		mg/L		100	80 - 120
Potassium, Dissolved	10.0	9.78	^	mg/L		98	80 - 120
Selenium, Dissolved	0.200	0.189		mg/L		94	80 - 120
Sodium, Dissolved	10.0	9.73		mg/L		97	80 - 120

Lab Sample ID: LCSD 480-414714/25-A
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 414714

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum, Dissolved	10.0	9.51		mg/L		95	80 - 120	1	20
Arsenic, Dissolved	0.200	0.202		mg/L		101	80 - 120	3	20
Boron, Dissolved	0.200	0.191		mg/L		96	80 - 120	0	20
Calcium, Dissolved	10.0	10.1		mg/L		101	80 - 120	3	20
Iron, Dissolved	10.0	10.5		mg/L		105	80 - 120	3	20
Magnesium, Dissolved	10.0	9.85		mg/L		99	80 - 120	2	20
Manganese, Dissolved	0.200	0.210		mg/L		105	80 - 120	3	20
Molybdenum, Dissolved	0.200	0.205		mg/L		102	80 - 120	2	20
Potassium, Dissolved	10.0	9.95		mg/L		99	80 - 120	2	20
Selenium, Dissolved	0.200	0.194		mg/L		97	80 - 120	3	20
Sodium, Dissolved	10.0	10.1		mg/L		100	80 - 120	3	20

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Method: 6010C - Dissolved Metals (Continued)

Lab Sample ID: MB 480-415611/1-A
Matrix: Water
Analysis Batch: 415942

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 415611

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	ND		0.050	0.019	mg/L		05/22/18 09:05	05/23/18 03:20	1

Lab Sample ID: LCS 480-415611/2-A
Matrix: Water
Analysis Batch: 415942

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 415611

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	10.0	10.2		mg/L		102	80 - 120

Lab Sample ID: 480-135906-4 MS
Matrix: Water
Analysis Batch: 415942

Client Sample ID: 1315-CC3-42D
Prep Type: Dissolved
Prep Batch: 415611

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	ND		10.0	10.3		mg/L		103	75 - 125

Lab Sample ID: 480-135906-4 MSD
Matrix: Water
Analysis Batch: 415942

Client Sample ID: 1315-CC3-42D
Prep Type: Dissolved
Prep Batch: 415611

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron, Dissolved	ND		10.0	10.3		mg/L		103	75 - 125	0	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-414801/29
Matrix: Water
Analysis Batch: 414801

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/17/18 18:02	1
Sulfate, Dissolved	0.358	J	2.0	0.35	mg/L			05/17/18 18:02	1

Lab Sample ID: LCS 480-414801/28
Matrix: Water
Analysis Batch: 414801

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	51.0		mg/L		102	90 - 110
Sulfate, Dissolved	50.0	51.4		mg/L		103	90 - 110

Lab Sample ID: 480-135906-6 MS
Matrix: Water
Analysis Batch: 414801

Client Sample ID: 1315-BLANK-42D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		50.0	53.9		mg/L		108	81 - 120
Sulfate, Dissolved	ND		50.0	55.1		mg/L		110	80 - 120

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-135906-6 MSD
Matrix: Water
Analysis Batch: 414801

Client Sample ID: 1315-BLANK-42D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride, Dissolved	ND		50.0	54.4		mg/L		109	81 - 120	1	20
Sulfate, Dissolved	ND		50.0	55.1		mg/L		110	80 - 120	0	20

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-417310/3
Matrix: Water
Analysis Batch: 417310

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.501	J	1.0	0.43	mg/L			05/25/18 05:34	1

Lab Sample ID: LCS 480-417310/4
Matrix: Water
Analysis Batch: 417310

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	60.1		mg/L		100	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-416501/30
Matrix: Water
Analysis Batch: 416501

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/24/18 22:10	1

Lab Sample ID: MB 480-416501/7
Matrix: Water
Analysis Batch: 416501

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/24/18 19:36	1

Lab Sample ID: LCS 480-416501/31
Matrix: Water
Analysis Batch: 416501

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	96.0		mg/L		96	90 - 110

Lab Sample ID: LCS 480-416501/8
Matrix: Water
Analysis Batch: 416501

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	96.3		mg/L		96	90 - 110

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 480-416695/7
Matrix: Water
Analysis Batch: 416695

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/25/18 14:20	1

Lab Sample ID: LCS 480-416695/8
Matrix: Water
Analysis Batch: 416695

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	94.7		mg/L		95	90 - 110

Lab Sample ID: 480-135906-4 DU
Matrix: Water
Analysis Batch: 416501

Client Sample ID: 1315-CC3-42D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Dissolved	62		62.9		mg/L		1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-415593/1
Matrix: Water
Analysis Batch: 415593

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			05/21/18 16:52	1

Lab Sample ID: LCS 480-415593/2
Matrix: Water
Analysis Batch: 415593

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	507	502		mg/L		99	85 - 115

Lab Sample ID: 480-135906-6 DU
Matrix: Water
Analysis Batch: 415593

Client Sample ID: 1315-BLANK-42D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	7.0	J	16.0	F5	mg/L		78	10

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

Metals

Prep Batch: 414714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	3005A	
480-135906-2	1315-PC6-42D	Dissolved	Water	3005A	
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	3005A	
480-135906-4	1315-CC3-42D	Dissolved	Water	3005A	
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	3005A	
480-135906-6	1315-BLANK-42D	Dissolved	Water	3005A	
MB 480-414714/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-414714/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 480-414714/25-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 415117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	6010C	414714
480-135906-2	1315-PC6-42D	Dissolved	Water	6010C	414714
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	6010C	414714
480-135906-4	1315-CC3-42D	Dissolved	Water	6010C	414714
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	6010C	414714
480-135906-6	1315-BLANK-42D	Dissolved	Water	6010C	414714
MB 480-414714/1-A	Method Blank	Total Recoverable	Water	6010C	414714
LCS 480-414714/2-A	Lab Control Sample	Total Recoverable	Water	6010C	414714
LCSD 480-414714/25-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	414714

Prep Batch: 415611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	3005A	
480-135906-4	1315-CC3-42D	Dissolved	Water	3005A	
480-135906-6	1315-BLANK-42D	Dissolved	Water	3005A	
MB 480-415611/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-415611/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
480-135906-4 MS	1315-CC3-42D	Dissolved	Water	3005A	
480-135906-4 MSD	1315-CC3-42D	Dissolved	Water	3005A	

Analysis Batch: 415942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	6010C	415611
480-135906-4	1315-CC3-42D	Dissolved	Water	6010C	415611
480-135906-6	1315-BLANK-42D	Dissolved	Water	6010C	415611
MB 480-415611/1-A	Method Blank	Total Recoverable	Water	6010C	415611
LCS 480-415611/2-A	Lab Control Sample	Total Recoverable	Water	6010C	415611
480-135906-4 MS	1315-CC3-42D	Dissolved	Water	6010C	415611
480-135906-4 MSD	1315-CC3-42D	Dissolved	Water	6010C	415611

General Chemistry

Analysis Batch: 414801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	9056A	
480-135906-2	1315-PC6-42D	Dissolved	Water	9056A	
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	9056A	
480-135906-4	1315-CC3-42D	Dissolved	Water	9056A	

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

General Chemistry (Continued)

Analysis Batch: 414801 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	9056A	
480-135906-6	1315-BLANK-42D	Dissolved	Water	9056A	
MB 480-414801/29	Method Blank	Total/NA	Water	9056A	
LCS 480-414801/28	Lab Control Sample	Total/NA	Water	9056A	
480-135906-6 MS	1315-BLANK-42D	Dissolved	Water	9056A	
480-135906-6 MSD	1315-BLANK-42D	Dissolved	Water	9056A	

Analysis Batch: 415593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	SM 2540C	
480-135906-2	1315-PC6-42D	Dissolved	Water	SM 2540C	
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	SM 2540C	
480-135906-4	1315-CC3-42D	Dissolved	Water	SM 2540C	
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	SM 2540C	
480-135906-6	1315-BLANK-42D	Dissolved	Water	SM 2540C	
MB 480-415593/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-415593/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-135906-6 DU	1315-BLANK-42D	Dissolved	Water	SM 2540C	

Analysis Batch: 416501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	SM 2320B	
480-135906-2	1315-PC6-42D	Dissolved	Water	SM 2320B	
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	SM 2320B	
480-135906-4	1315-CC3-42D	Dissolved	Water	SM 2320B	
480-135906-6	1315-BLANK-42D	Dissolved	Water	SM 2320B	
MB 480-416501/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-416501/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-416501/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-416501/8	Lab Control Sample	Total/NA	Water	SM 2320B	
480-135906-4 DU	1315-CC3-42D	Dissolved	Water	SM 2320B	

Analysis Batch: 416695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	SM 2320B	
MB 480-416695/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-416695/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 417310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-135906-1	1315-PC3-42D	Dissolved	Water	9060A	
480-135906-2	1315-PC6-42D	Dissolved	Water	9060A	
480-135906-3	1315-PC3FS1-42D	Dissolved	Water	9060A	
480-135906-4	1315-CC3-42D	Dissolved	Water	9060A	
480-135906-5	1315-PC3HLDM-42D	Dissolved	Water	9060A	
480-135906-6	1315-BLANK-42D	Dissolved	Water	9060A	
MB 480-417310/3	Method Blank	Dissolved	Water	9060A	
LCS 480-417310/4	Lab Control Sample	Dissolved	Water	9060A	

TestAmerica Buffalo

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-135906-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18 *
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



681-Atlanta

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CHAIN OF CUSTODY

DATE:



COC #

PAGE: 480-135906 COC

Project Name:	Bally Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number:	377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager:	Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information							Methods for Analysis					RUSH					
No.	Sample ID	Date & Time Sampled		Matrix	Sample Type	MS/MSD	Diss. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 Week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyzes
1	1315-PC3-42D	5/14/18	1000	W	FS	N	X	X	X	X	X					X	
2	1315-PC6-42D		1015				X	X	X	X	X					X	
3	1315-PC3FS1-42D		1030				X	X	X	X	X					X	
4	1315-CC3-42D		1045				X	X	X	X	X					X	
5	1315-PC3HLDM-42D		1100				X	X	X	X	X					X	
6	1315-BLANK-42D		1115				X	X	X	X	X					X	
7																	
8																	
9																	
10																	
11																	
12																	

Sampler's Signature: <i>Jamecia Bradley</i>	Date: 5/14/18	Time: 1118	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: <i>Jamecia Bradley</i>	Date: 5/14/18	Time: 1306	Does COC match samples:	Y or N	
Received By: <i>[Signature]</i>	Date: 5-14-18	Time: 1306	Broken Container:	Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 5-14-18	Time: 1440	COC seal intact:	Y or N	
Received By: <i>[Signature]</i>	Date: 5-14-18	Time: 1440	Other problems:	Y or N	
Relinquished By/Affiliation:	Date:	Time:	WSDOT contacted:	Y or N	
Received By (LAB): <i>Markow Likob</i>	Date: 05/15/18	Time: 1630	Date contacted:		
			Cooler Temperature at receipt: <i>316#1</i> °C		



Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-135906-1

Login Number: 135906

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.	True	
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	



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: 480-136902-1

Client Project/Site: Bailly Treatability Study

For:

Wood E&I Solutions Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

6/20/2018 1:31:47 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.

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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-136902-1	1312-PC3-91D	Solid	06/04/18 10:55	06/05/18 10:15
480-136902-2	1312-PC6-91D	Solid	06/04/18 10:56	06/05/18 10:15
480-136902-3	1312-PC3FS1-91D	Solid	06/04/18 10:57	06/05/18 10:15
480-136902-4	1312-CC3-91D	Solid	06/04/18 10:58	06/05/18 10:15
480-136902-5	1312-PC3HLDM-91D	Solid	06/04/18 10:59	06/05/18 10:15
480-136902-6	1312-PC3-91D-DUP	Solid	06/04/18 10:55	06/05/18 10:15
480-136902-7	1312-PC6-91D-DUP	Solid	06/04/18 10:56	06/05/18 10:15
480-136902-8	1312-PC3FS1-91D-DUP	Solid	06/04/18 10:57	06/05/18 10:15
480-136902-9	1312-CC3-91D-DUP	Solid	06/04/18 10:58	06/05/18 10:15
480-136902-10	1312-PC3HLDM-91D-DUP	Solid	06/04/18 10:59	06/05/18 10:15



Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Baily Treatability Study

TestAmerica Job ID: 480-136902-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
1312	SPLP Extraction	SW846	TAL BUF
3010A	Preparation, Total Metals	SW846	TAL BUF

Protocol References:

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



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.

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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Job ID: 480-136902-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-136902-1**

Comments

No additional comments.

Receipt

The samples were received on 6/5/2018 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

Metals

Method(s) 6010C: The recovery of Post Spike, (480-136902-A-5-B PDS), in batch 480-419568 exhibited a result outside the quality control limits for Total Calcium. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary

Method(s) 6010C: Sodium is elevated in the Leachate Blank, LB 480-419322. Due to the possibility of Sodium being a trace element in the SPLP fluid, the data 1312-PC3-91D (480-136902-1), 1312-PC6-91D (480-136902-2), 1312-PC3FS1-91D (480-136902-3), 1312-CC3-91D (480-136902-4), 1312-PC3HLDLDM-91D (480-136902-5), 1312-PC3-91D-DUP (480-136902-6), 1312-PC6-91D-DUP (480-136902-7), 1312-PC3FS1-91D-DUP (480-136902-8), 1312-CC3-91D-DUP (480-136902-9) and 1312-PC3HLDLDM-91D-DUP (480-136902-10) has been qualified and reported.

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

Organic Prep

Method(s) 1312: The following samples: 1312-PC3FS1-91D (480-136902-3), 1312-CC3-91D (480-136902-4), 1312-PC3FS1-91D-DUP (480-136902-8) and 1312-CC3-91D-DUP (480-136902-9) was decanted prior to preparation.

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

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3-91D

Lab Sample ID: 480-136902-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	4.5		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.033		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.62		0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	54		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	18		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.057		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.3	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-91D

Lab Sample ID: 480-136902-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.5		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.017		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.47	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	68		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	41		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.047		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	7.4	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-91D

Lab Sample ID: 480-136902-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1.5		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.031		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.35	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	47		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.63		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.031		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.5	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-91D

Lab Sample ID: 480-136902-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	5.8		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.038		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.54		0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	55		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	8.5		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.075		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.3	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-91D

Lab Sample ID: 480-136902-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	5.2		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.014	J	0.015	0.0056	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3HLDM-91D (Continued)

Lab Sample ID: 480-136902-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.26	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	99		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.1		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	21		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.053		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	5.0	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3-91D-DUP

Lab Sample ID: 480-136902-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	4.5		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.032		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.61		0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	54		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	18		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.058		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.3	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC6-91D-DUP

Lab Sample ID: 480-136902-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.5		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.016		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.48	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	68		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	41		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.047		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	7.5	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3FS1-91D-DUP

Lab Sample ID: 480-136902-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1.6		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.031		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.37	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	50		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	0.66		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	13		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.034		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	3.7	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-CC3-91D-DUP

Lab Sample ID: 480-136902-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	6.0		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.039		0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.55		0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	56		3.0	1.0	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-CC3-91D-DUP (Continued)

Lab Sample ID: 480-136902-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	8.8		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.073		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	4.4	B	1.0	0.32	mg/L	1		6010C	SPLP East

Client Sample ID: 1312-PC3HLDM-91D-DUP

Lab Sample ID: 480-136902-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	5.3		0.20	0.060	mg/L	1		6010C	SPLP East
Arsenic	0.014	J	0.015	0.0056	mg/L	1		6010C	SPLP East
Boron	0.27	J	0.50	0.10	mg/L	1		6010C	SPLP East
Calcium	100		3.0	1.0	mg/L	1		6010C	SPLP East
Molybdenum	1.2		0.010	0.0036	mg/L	1		6010C	SPLP East
Potassium	22		2.0	1.0	mg/L	1		6010C	SPLP East
Selenium	0.057		0.025	0.0087	mg/L	1		6010C	SPLP East
Sodium	5.2	B	1.0	0.32	mg/L	1		6010C	SPLP East

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3-91D

Lab Sample ID: 480-136902-1

Date Collected: 06/04/18 10:55

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4.5		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:07	1
Arsenic	0.033		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:07	1
Boron	0.62		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:07	1
Calcium	54		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:07	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:07	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:07	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:07	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:07	1
Potassium	18		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:07	1
Selenium	0.057		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:07	1
Sodium	4.3	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:07	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC6-91D

Lab Sample ID: 480-136902-2

Date Collected: 06/04/18 10:56

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.5		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:10	1
Arsenic	0.017		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:10	1
Boron	0.47	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:10	1
Calcium	68		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:10	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:10	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:10	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:10	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:10	1
Potassium	41		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:10	1
Selenium	0.047		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:10	1
Sodium	7.4	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:10	1



Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3FS1-91D

Lab Sample ID: 480-136902-3

Date Collected: 06/04/18 10:57

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.5		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:25	1
Arsenic	0.031		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:25	1
Boron	0.35	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:25	1
Calcium	47		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:25	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:25	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:25	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:25	1
Molybdenum	0.63		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:25	1
Potassium	13		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:25	1
Selenium	0.031		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:25	1
Sodium	3.5	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:25	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-CC3-91D

Lab Sample ID: 480-136902-4

Date Collected: 06/04/18 10:58

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5.8		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:28	1
Arsenic	0.038		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:28	1
Boron	0.54		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:28	1
Calcium	55		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:28	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:28	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:28	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:28	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:28	1
Potassium	8.5		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:28	1
Selenium	0.075		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:28	1
Sodium	4.3	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:28	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3HLDM-91D

Lab Sample ID: 480-136902-5

Date Collected: 06/04/18 10:59

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5.2		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:32	1
Arsenic	0.014	J	0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:32	1
Boron	0.26	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:32	1
Calcium	99		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:32	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:32	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:32	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:32	1
Molybdenum	1.1		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:32	1
Potassium	21		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:32	1
Selenium	0.053		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:32	1
Sodium	5.0	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:32	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3-91D-DUP

Lab Sample ID: 480-136902-6

Date Collected: 06/04/18 10:55

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4.5		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:50	1
Arsenic	0.032		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:50	1
Boron	0.61		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:50	1
Calcium	54		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:50	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:50	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:50	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:50	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:50	1
Potassium	18		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:50	1
Selenium	0.058		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:50	1
Sodium	4.3	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:50	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC6-91D-DUP

Lab Sample ID: 480-136902-7

Date Collected: 06/04/18 10:56

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.5		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 20:53	1
Arsenic	0.016		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 20:53	1
Boron	0.48	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:53	1
Calcium	68		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:53	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 20:53	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 20:53	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 20:53	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 20:53	1
Potassium	41		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 20:53	1
Selenium	0.047		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 20:53	1
Sodium	7.5	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 20:53	1



Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3FS1-91D-DUP

Lab Sample ID: 480-136902-8

Date Collected: 06/04/18 10:57

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.6		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 21:08	1
Arsenic	0.031		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 21:08	1
Boron	0.37	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:08	1
Calcium	50		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:08	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 21:08	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:08	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 21:08	1
Molybdenum	0.66		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 21:08	1
Potassium	13		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:08	1
Selenium	0.034		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 21:08	1
Sodium	3.7	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 21:08	1



Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-CC3-91D-DUP

Lab Sample ID: 480-136902-9

Date Collected: 06/04/18 10:58

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6.0		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 21:11	1
Arsenic	0.039		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 21:11	1
Boron	0.55		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:11	1
Calcium	56		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:11	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 21:11	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:11	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 21:11	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 21:11	1
Potassium	8.8		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:11	1
Selenium	0.073		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 21:11	1
Sodium	4.4	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 21:11	1



Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Client Sample ID: 1312-PC3HLDM-91D-DUP

Lab Sample ID: 480-136902-10

Date Collected: 06/04/18 10:59

Matrix: Solid

Date Received: 06/05/18 10:15

Method: 6010C - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5.3		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 21:15	1
Arsenic	0.014	J	0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 21:15	1
Boron	0.27	J	0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:15	1
Calcium	100		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:15	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 21:15	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 21:15	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 21:15	1
Molybdenum	1.2		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 21:15	1
Potassium	22		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 21:15	1
Selenium	0.057		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 21:15	1
Sodium	5.2	B	1.0	0.32	mg/L		06/14/18 09:45	06/14/18 21:15	1



QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-419568/2-A
Matrix: Solid
Analysis Batch: 419803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 19:59	1
Arsenic	ND		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 19:59	1
Boron	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 19:59	1
Calcium	ND		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 19:59	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 19:59	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 19:59	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 19:59	1
Molybdenum	ND		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 19:59	1
Potassium	ND		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 19:59	1
Selenium	ND		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 19:59	1
Sodium	ND		1.0	0.32	mg/L		06/14/18 09:45	06/14/18 19:59	1

Lab Sample ID: LCS 480-419568/3-A
Matrix: Solid
Analysis Batch: 419803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	8.96		mg/L		90	80 - 120
Arsenic	1.20	1.12		mg/L		93	80 - 120
Boron	0.200	0.208	J	mg/L		104	80 - 120
Calcium	10.0	9.48		mg/L		95	80 - 120
Iron	10.0	9.45		mg/L		94	80 - 120
Magnesium	10.0	9.54		mg/L		95	80 - 120
Manganese	1.20	1.17		mg/L		97	80 - 120
Molybdenum	1.20	1.12		mg/L		93	80 - 120
Potassium	10.0	9.26		mg/L		93	80 - 120
Selenium	1.20	1.12		mg/L		93	80 - 120
Sodium	10.0	10.3		mg/L		103	80 - 120

Lab Sample ID: LB 480-419322/1-B
Matrix: Solid
Analysis Batch: 419803

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 419568

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		06/14/18 09:45	06/14/18 19:56	1
Arsenic	ND		0.015	0.0056	mg/L		06/14/18 09:45	06/14/18 19:56	1
Boron	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 19:56	1
Calcium	ND		3.0	1.0	mg/L		06/14/18 09:45	06/14/18 19:56	1
Iron	ND		0.10	0.050	mg/L		06/14/18 09:45	06/14/18 19:56	1
Magnesium	ND		0.50	0.10	mg/L		06/14/18 09:45	06/14/18 19:56	1
Manganese	ND		0.010	0.0050	mg/L		06/14/18 09:45	06/14/18 19:56	1
Molybdenum	ND		0.010	0.0036	mg/L		06/14/18 09:45	06/14/18 19:56	1
Potassium	ND		2.0	1.0	mg/L		06/14/18 09:45	06/14/18 19:56	1
Selenium	ND		0.025	0.0087	mg/L		06/14/18 09:45	06/14/18 19:56	1
Sodium	1.13		1.0	0.32	mg/L		06/14/18 09:45	06/14/18 19:56	1

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

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

Lab Sample ID: 480-136902-5 MS

Matrix: Solid

Analysis Batch: 419803

Client Sample ID: 1312-PC3HLDM-91D

Prep Type: SPLP East

Prep Batch: 419568

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Aluminum	5.2		10.0	13.8		mg/L		86		75 - 125
Arsenic	0.014	J	1.20	1.13		mg/L		93		75 - 125
Boron	0.26	J	0.200	0.437	J	mg/L		88		75 - 125
Calcium	99		10.0	105	4	mg/L		61		75 - 125
Iron	ND		10.0	9.20		mg/L		92		75 - 125
Magnesium	ND		10.0	9.16		mg/L		92		75 - 125
Manganese	ND		1.20	1.13		mg/L		94		75 - 125
Molybdenum	1.1		1.20	2.19		mg/L		89		75 - 125
Potassium	21		10.0	29.6		mg/L		84		75 - 125
Selenium	0.053		1.20	1.16		mg/L		92		75 - 125
Sodium	5.0	B	10.0	13.9		mg/L		89		75 - 125

Lab Sample ID: 480-136902-5 MSD

Matrix: Solid

Analysis Batch: 419803

Client Sample ID: 1312-PC3HLDM-91D

Prep Type: SPLP East

Prep Batch: 419568

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
Aluminum	5.2		10.0	13.7		mg/L		86		75 - 125	0	20
Arsenic	0.014	J	1.20	1.13		mg/L		93		75 - 125	0	20
Boron	0.26	J	0.200	0.437	J	mg/L		88		75 - 125	0	20
Calcium	99		10.0	104	4	mg/L		58		75 - 125	0	20
Iron	ND		10.0	9.13		mg/L		91		75 - 125	1	20
Magnesium	ND		10.0	9.09		mg/L		91		75 - 125	1	20
Manganese	ND		1.20	1.12		mg/L		93		75 - 125	1	20
Molybdenum	1.1		1.20	2.18		mg/L		88		75 - 125	0	20
Potassium	21		10.0	29.3		mg/L		81		75 - 125	1	20
Selenium	0.053		1.20	1.15		mg/L		92		75 - 125	0	20
Sodium	5.0	B	10.0	13.9		mg/L		88		75 - 125	0	20

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

Metals

Leach Batch: 419322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136902-1	1312-PC3-91D	SPLP East	Solid	1312	
480-136902-2	1312-PC6-91D	SPLP East	Solid	1312	
480-136902-3	1312-PC3FS1-91D	SPLP East	Solid	1312	
480-136902-4	1312-CC3-91D	SPLP East	Solid	1312	
480-136902-5	1312-PC3HLDLDM-91D	SPLP East	Solid	1312	
480-136902-6	1312-PC3-91D-DUP	SPLP East	Solid	1312	
480-136902-7	1312-PC6-91D-DUP	SPLP East	Solid	1312	
480-136902-8	1312-PC3FS1-91D-DUP	SPLP East	Solid	1312	
480-136902-9	1312-CC3-91D-DUP	SPLP East	Solid	1312	
480-136902-10	1312-PC3HLDLDM-91D-DUP	SPLP East	Solid	1312	
LB 480-419322/1-B	Method Blank	SPLP East	Solid	1312	
480-136902-5 MS	1312-PC3HLDLDM-91D	SPLP East	Solid	1312	
480-136902-5 MSD	1312-PC3HLDLDM-91D	SPLP East	Solid	1312	

Prep Batch: 419568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136902-1	1312-PC3-91D	SPLP East	Solid	3010A	419322
480-136902-2	1312-PC6-91D	SPLP East	Solid	3010A	419322
480-136902-3	1312-PC3FS1-91D	SPLP East	Solid	3010A	419322
480-136902-4	1312-CC3-91D	SPLP East	Solid	3010A	419322
480-136902-5	1312-PC3HLDLDM-91D	SPLP East	Solid	3010A	419322
480-136902-6	1312-PC3-91D-DUP	SPLP East	Solid	3010A	419322
480-136902-7	1312-PC6-91D-DUP	SPLP East	Solid	3010A	419322
480-136902-8	1312-PC3FS1-91D-DUP	SPLP East	Solid	3010A	419322
480-136902-9	1312-CC3-91D-DUP	SPLP East	Solid	3010A	419322
480-136902-10	1312-PC3HLDLDM-91D-DUP	SPLP East	Solid	3010A	419322
LB 480-419322/1-B	Method Blank	SPLP East	Solid	3010A	419322
MB 480-419568/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-419568/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-136902-5 MS	1312-PC3HLDLDM-91D	SPLP East	Solid	3010A	419322
480-136902-5 MSD	1312-PC3HLDLDM-91D	SPLP East	Solid	3010A	419322

Analysis Batch: 419803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136902-1	1312-PC3-91D	SPLP East	Solid	6010C	419568
480-136902-2	1312-PC6-91D	SPLP East	Solid	6010C	419568
480-136902-3	1312-PC3FS1-91D	SPLP East	Solid	6010C	419568
480-136902-4	1312-CC3-91D	SPLP East	Solid	6010C	419568
480-136902-5	1312-PC3HLDLDM-91D	SPLP East	Solid	6010C	419568
480-136902-6	1312-PC3-91D-DUP	SPLP East	Solid	6010C	419568
480-136902-7	1312-PC6-91D-DUP	SPLP East	Solid	6010C	419568
480-136902-8	1312-PC3FS1-91D-DUP	SPLP East	Solid	6010C	419568
480-136902-9	1312-CC3-91D-DUP	SPLP East	Solid	6010C	419568
480-136902-10	1312-PC3HLDLDM-91D-DUP	SPLP East	Solid	6010C	419568
LB 480-419322/1-B	Method Blank	SPLP East	Solid	6010C	419568
MB 480-419568/2-A	Method Blank	Total/NA	Solid	6010C	419568
LCS 480-419568/3-A	Lab Control Sample	Total/NA	Solid	6010C	419568
480-136902-5 MS	1312-PC3HLDLDM-91D	SPLP East	Solid	6010C	419568
480-136902-5 MSD	1312-PC3HLDLDM-91D	SPLP East	Solid	6010C	419568

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136902-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	03-31-19
Oklahoma	State Program	6	9421	08-31-18
Oregon	NELAP	10	NY200003	06-09-19
Pennsylvania	NELAP	3	68-00281	07-31-18 *
Rhode Island	State Program	1	LAO00328	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18 *
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: 6/4
 COC #: _____
 PAGE: 1 C



480-136902 COC

Project Name:	Bailly Treatability Study	Project Contact:	Denise King	Bill To:	NiSource	Disposal Instructions:	LAB
Project Number:	377882016	Phone Number:	978-392-5339			Shipment Method:	FEDEX
Project Manager:	Russell Johnson	Project Phase:	:2400			Waybill Number:	N/A

Sample Information						Methods for Analysis										RUSH						
No.	Sample ID	Date & Time Sampled		Matrix	Sample Type	MS/MSD	*SPLP Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)										1 week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1312-PC3-91D	6/4/18	1055	S	FS	N	X															
2	1312-PC6-91D		1056				X															
3	1312-PC3FS1-91D		1057				X															
4	1312-CC3-91D		1058				X															
5	1312-PC3HLDM-91D		1059				X															
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Sampler's Signature:	<i>Jamacia Bradley</i>	Date:	6/4/18	Time:	11:01	For Lab Use		Comments: X=Analyze H=Hold Analysis Request Standard TAT - Need results by 6/19/18 Shipped from Kemron - Atlanta GA *Please perform a lab duplicate analysis for each sample for SPLP metals only (not all other wet chem parameters) NUMBER OF COOLERS SENT:
Relinquished By/Affiliation:	<i>Jamacia Bradley</i>	Date:	6/4/18	Time:	13:00	Does COC match samples:	Y or N	
Received By:	<i>[Signature]</i>	Date:	6/4/18	Time:	13:00	Broken Container:	Y or N	
Relinquished By/Affiliation:	<i>[Signature]</i>	Date:	6/4/18	Time:	16:00	COC seal intact:	Y or N	
Received By:	<i>[Signature]</i>	Date:	6/4/18	Time:		Other problems:	Y or N	
Relinquished By/Affiliation:	<i>[Signature]</i>	Date:	6/4/18	Time:		WSDOT contacted:	Y or N	
Received By (LAB):	<i>Chankwailikolb</i>	Date:	6/5/18	Time:	10:15	Date contacted:		
						Cooler Temperature at receipt:	2.7 °C #ICE	



Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-136902-1

Login Number: 136902

List Source: TestAmerica Buffalo

List Number: 1

Creator: Stopa, Erik S

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.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



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: 480-136297-1

Client Project/Site: BaillyTreatability Study

For:

Wood E&I Solutions Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

6/20/2018 3:51:38 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.

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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-136297-1	1315-PC3-49D	Water	05/21/18 10:00	05/22/18 09:50
480-136297-2	1315-PC6-49D	Water	05/21/18 10:10	05/22/18 09:50
480-136297-3	1315-PC3FS1-49D	Water	05/21/18 10:20	05/22/18 09:50
480-136297-4	1315-CC3-49D	Water	05/21/18 10:30	05/22/18 09:50
480-136297-5	1315-PC3HLDM-49D	Water	05/21/18 10:40	05/22/18 09:50
480-136297-6	1315-BLANK-49D	Water	05/21/18 10:50	05/22/18 09:50

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Method Summary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.

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: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Job ID: 480-136297-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-136297-1

Comments

No additional comments.

Receipt

The samples were received on 5/22/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

HPLC/IC

Method(s) 9056A: The following sample was reported with elevated reporting limits for all analytes: 1315-PC3HLDM-49D (480-136297-5). The sample was analyzed at a dilution based on screening results.

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

Metals

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

General Chemistry

Method(s) SM 2320B: The following sample(s) was received with headspace in the sample container. This sample container was received with headspace. 1315-PC3-49D (480-136297-1), 1315-PC6-49D (480-136297-2), 1315-PC3FS1-49D (480-136297-3), 1315-CC3-49D (480-136297-4), 1315-PC3HLDM-49D (480-136297-5), 1315-BLANK-49D (480-136297-6) and (480-136102-F-1).

Method(s) SM 2540C: Due to an analyst oversight the initial weight of the sample containers was not recorded; therefore the initial results for this analysis could not be calculated. The samples were reset outside of the analytical holding time: 1315-PC3-49D (480-136297-1), 1315-PC6-49D (480-136297-2), 1315-PC3FS1-49D (480-136297-3), 1315-CC3-49D (480-136297-4), 1315-PC3HLDM-49D (480-136297-5), 1315-BLANK-49D (480-136297-6) and (480-136297-A-1 DU).

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

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-PC3-49D

Lab Sample ID: 480-136297-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.6		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.020		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.26		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	25		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.087	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.32		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	7.1		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	0.98	J	1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	5.3	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.3	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	68		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	80	H	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-49D

Lab Sample ID: 480-136297-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.2		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.0073	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.22		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	32		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.058	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.34		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	11		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.5		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	4.3		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	90		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	99	H	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-49D

Lab Sample ID: 480-136297-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.82		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.032		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.19		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	29		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.10	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.087		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	6.2		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	0.78	J	1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	16	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	1.6		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	67		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	87	H	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-49D

Lab Sample ID: 480-136297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.4		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.047		0.015	0.0056	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-CC3-49D (Continued)

Lab Sample ID: 480-136297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron, Dissolved	0.27		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	26		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.060	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	3.4		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	0.68	J	1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	13	B	2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.0		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	61		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	75	H	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-49D

Lab Sample ID: 480-136297-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.6		0.20	0.060	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.16		0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	48		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.044	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.20		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.0		0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.2		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	3.3		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.0		1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	120		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	140	H	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-49D

Lab Sample ID: 480-136297-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.021	J	0.050	0.019	mg/L	1		6010C	Dissolved
Alkalinity, Dissolved	2.1	J	5.0	0.79	mg/L	1		SM 2320B	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-PC3-49D

Lab Sample ID: 480-136297-1

Date Collected: 05/21/18 10:00

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.6		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:37	1
Arsenic, Dissolved	0.020		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:37	1
Boron, Dissolved	0.26		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:37	1
Calcium, Dissolved	25		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:37	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:37	1
Magnesium, Dissolved	0.087	J	0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:37	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:37	1
Molybdenum, Dissolved	0.32		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:37	1
Potassium, Dissolved	7.1		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:37	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:37	1
Sodium, Dissolved	0.98	J	1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:37	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 17:52	1
Sulfate, Dissolved	5.3	B	2.0	0.35	mg/L			05/24/18 17:52	1
Dissolved Organic Carbon	2.3	B	1.0	0.43	mg/L			06/02/18 14:18	1
Alkalinity, Dissolved	68		5.0	0.79	mg/L			05/30/18 18:47	1
Total Dissolved Solids	80	H	10	4.0	mg/L			06/05/18 12:01	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-PC6-49D

Lab Sample ID: 480-136297-2

Date Collected: 05/21/18 10:10

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.2		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:40	1
Arsenic, Dissolved	0.0073	J	0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:40	1
Boron, Dissolved	0.22		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:40	1
Calcium, Dissolved	32		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:40	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:40	1
Magnesium, Dissolved	0.058	J	0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:40	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:40	1
Molybdenum, Dissolved	0.34		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:40	1
Potassium, Dissolved	11		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:40	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:40	1
Sodium, Dissolved	1.5		1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 18:07	1
Sulfate, Dissolved	4.3		2.0	0.35	mg/L			05/26/18 12:43	1
Dissolved Organic Carbon	2.7		1.0	0.43	mg/L			06/02/18 22:52	1
Alkalinity, Dissolved	90		5.0	0.79	mg/L			05/30/18 18:55	1
Total Dissolved Solids	99	H	10	4.0	mg/L			06/05/18 12:01	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-PC3FS1-49D

Lab Sample ID: 480-136297-3

Date Collected: 05/21/18 10:20

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.82		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:44	1
Arsenic, Dissolved	0.032		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:44	1
Boron, Dissolved	0.19		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:44	1
Calcium, Dissolved	29		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:44	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:44	1
Magnesium, Dissolved	0.10	J	0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:44	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:44	1
Molybdenum, Dissolved	0.087		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:44	1
Potassium, Dissolved	6.2		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:44	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:44	1
Sodium, Dissolved	0.78	J	1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:44	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 18:22	1
Sulfate, Dissolved	16	B	2.0	0.35	mg/L			05/24/18 18:22	1
Dissolved Organic Carbon	1.6		1.0	0.43	mg/L			06/03/18 02:50	1
Alkalinity, Dissolved	67		5.0	0.79	mg/L			05/30/18 19:02	1
Total Dissolved Solids	87	H	10	4.0	mg/L			06/05/18 12:01	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-CC3-49D

Lab Sample ID: 480-136297-4

Date Collected: 05/21/18 10:30

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.4		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:48	1
Arsenic, Dissolved	0.047		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:48	1
Boron, Dissolved	0.27		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:48	1
Calcium, Dissolved	26		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:48	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:48	1
Magnesium, Dissolved	0.060	J	0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:48	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:48	1
Molybdenum, Dissolved	0.17		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:48	1
Potassium, Dissolved	3.4		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:48	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:48	1
Sodium, Dissolved	0.68	J	1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:48	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 19:35	1
Sulfate, Dissolved	13	B	2.0	0.35	mg/L			05/24/18 19:35	1
Dissolved Organic Carbon	2.0		1.0	0.43	mg/L			06/03/18 03:20	1
Alkalinity, Dissolved	61		5.0	0.79	mg/L			05/30/18 19:09	1
Total Dissolved Solids	75	H	10	4.0	mg/L			06/05/18 12:01	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-PC3HLDM-49D

Lab Sample ID: 480-136297-5

Date Collected: 05/21/18 10:40

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.6		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:52	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:52	1
Boron, Dissolved	0.16		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:52	1
Calcium, Dissolved	48		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:52	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:52	1
Magnesium, Dissolved	0.044	J	0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:52	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:52	1
Molybdenum, Dissolved	0.20		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:52	1
Potassium, Dissolved	9.0		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:52	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:52	1
Sodium, Dissolved	1.2		1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			05/24/18 19:49	2
Sulfate, Dissolved	3.3		2.0	0.35	mg/L			05/26/18 12:51	1
Dissolved Organic Carbon	2.0		1.0	0.43	mg/L			06/03/18 03:50	1
Alkalinity, Dissolved	120		5.0	0.79	mg/L			05/30/18 19:18	1
Total Dissolved Solids	140	H	10	4.0	mg/L			06/05/18 12:01	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Client Sample ID: 1315-BLANK-49D

Lab Sample ID: 480-136297-6

Date Collected: 05/21/18 10:50

Matrix: Water

Date Received: 05/22/18 09:50

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 21:55	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 21:55	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 21:55	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:55	1
Iron, Dissolved	0.021	J	0.050	0.019	mg/L		05/24/18 11:09	05/31/18 21:55	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/24/18 11:09	05/31/18 21:55	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 21:55	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 21:55	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 21:55	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 21:55	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/24/18 11:09	05/31/18 21:55	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 20:04	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/24/18 20:04	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			06/03/18 04:19	1
Alkalinity, Dissolved	2.1	J	5.0	0.79	mg/L			05/30/18 19:25	1
Total Dissolved Solids	ND	H	10	4.0	mg/L			06/05/18 12:01	1

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-415980/1-A
Matrix: Water
Analysis Batch: 417456

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 415980

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		05/24/18 11:09	05/31/18 20:14	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		05/24/18 11:09	05/31/18 20:14	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		05/24/18 11:09	05/31/18 20:14	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 20:14	1
Iron, Dissolved	ND		0.050	0.019	mg/L		05/24/18 11:09	05/31/18 20:14	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		05/24/18 11:09	05/31/18 20:14	1
Manganese, Dissolved	0.000950	J	0.0030	0.00040	mg/L		05/24/18 11:09	05/31/18 20:14	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		05/24/18 11:09	05/31/18 20:14	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		05/24/18 11:09	05/31/18 20:14	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		05/24/18 11:09	05/31/18 20:14	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		05/24/18 11:09	05/31/18 20:14	1

Lab Sample ID: LCS 480-415980/2-A
Matrix: Water
Analysis Batch: 417456

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 415980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum, Dissolved	10.0	9.52		mg/L		95	80 - 120
Arsenic, Dissolved	0.200	0.201		mg/L		100	80 - 120
Boron, Dissolved	0.200	0.209		mg/L		105	80 - 120
Calcium, Dissolved	10.0	10.0		mg/L		100	80 - 120
Iron, Dissolved	10.0	10.1		mg/L		101	80 - 120
Magnesium, Dissolved	10.0	10.0		mg/L		100	80 - 120
Manganese, Dissolved	0.200	0.199		mg/L		99	80 - 120
Molybdenum, Dissolved	0.200	0.203		mg/L		102	80 - 120
Potassium, Dissolved	10.0	9.39		mg/L		94	80 - 120
Selenium, Dissolved	0.200	0.200		mg/L		100	80 - 120
Sodium, Dissolved	10.0	9.42		mg/L		94	80 - 120

Lab Sample ID: LCSD 480-415980/3-A
Matrix: Water
Analysis Batch: 417456

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 415980

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum, Dissolved	10.0	9.57		mg/L		96	80 - 120	1	20
Arsenic, Dissolved	0.200	0.200		mg/L		100	80 - 120	0	20
Boron, Dissolved	0.200	0.211		mg/L		105	80 - 120	1	20
Calcium, Dissolved	10.0	9.97		mg/L		100	80 - 120	1	20
Iron, Dissolved	10.0	9.98		mg/L		100	80 - 120	1	20
Magnesium, Dissolved	10.0	9.91		mg/L		99	80 - 120	1	20
Manganese, Dissolved	0.200	0.197		mg/L		99	80 - 120	1	20
Molybdenum, Dissolved	0.200	0.203		mg/L		102	80 - 120	0	20
Potassium, Dissolved	10.0	9.43		mg/L		94	80 - 120	0	20
Selenium, Dissolved	0.200	0.201		mg/L		100	80 - 120	0	20
Sodium, Dissolved	10.0	9.43		mg/L		94	80 - 120	0	20

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-416093/29
Matrix: Water
Analysis Batch: 416093

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/24/18 16:54	1
Sulfate, Dissolved	0.879	J	2.0	0.35	mg/L			05/24/18 16:54	1

Lab Sample ID: LCS 480-416093/28
Matrix: Water
Analysis Batch: 416093

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	51.1		mg/L		102	90 - 110
Sulfate, Dissolved	50.0	54.2		mg/L		108	90 - 110

Lab Sample ID: MB 480-416644/5
Matrix: Water
Analysis Batch: 416644

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			05/26/18 12:10	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			05/26/18 12:10	1

Lab Sample ID: LCS 480-416644/4
Matrix: Water
Analysis Batch: 416644

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	53.0		mg/L		106	90 - 110
Sulfate, Dissolved	50.0	53.0		mg/L		106	90 - 110

Lab Sample ID: 480-136297-3 MS
Matrix: Water
Analysis Batch: 416093

Client Sample ID: 1315-PC3FS1-49D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		50.0	53.1		mg/L		106	81 - 120
Sulfate, Dissolved	16	B	50.0	69.1		mg/L		107	80 - 120

Lab Sample ID: 480-136297-3 MSD
Matrix: Water
Analysis Batch: 416093

Client Sample ID: 1315-PC3FS1-49D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride, Dissolved	ND		50.0	52.5		mg/L		105	81 - 120	1	20
Sulfate, Dissolved	16	B	50.0	70.0		mg/L		109	80 - 120	1	20

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-419704/3
Matrix: Water
Analysis Batch: 419704

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			06/02/18 18:56	1

Lab Sample ID: LCS 480-419704/4
Matrix: Water
Analysis Batch: 419704

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	54.3		mg/L		90	90 - 110

Lab Sample ID: MB 480-419710/3
Matrix: Water
Analysis Batch: 419710

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.709	J	1.0	0.43	mg/L			06/02/18 10:14	1

Lab Sample ID: LCS 480-419710/4
Matrix: Water
Analysis Batch: 419710

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	58.1		mg/L		97	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-417167/30
Matrix: Water
Analysis Batch: 417167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/30/18 16:51	1

Lab Sample ID: MB 480-417167/7
Matrix: Water
Analysis Batch: 417167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			05/30/18 14:16	1

Lab Sample ID: LCS 480-417167/31
Matrix: Water
Analysis Batch: 417167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	94.8		mg/L		95	90 - 110

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 480-417167/8
Matrix: Water
Analysis Batch: 417167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	93.8		mg/L		94	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-417969/1
Matrix: Water
Analysis Batch: 417969

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	4.0	mg/L			06/05/18 12:01	1

Lab Sample ID: LCS 480-417969/2
Matrix: Water
Analysis Batch: 417969

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	518	499		mg/L		96	85 - 115

Lab Sample ID: 480-136297-1 DU
Matrix: Water
Analysis Batch: 417969

Client Sample ID: 1315-PC3-49D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	80	H	81.0		mg/L		1	10

QC Association Summary

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

Metals

Prep Batch: 415980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	3005A	
480-136297-2	1315-PC6-49D	Dissolved	Water	3005A	
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	3005A	
480-136297-4	1315-CC3-49D	Dissolved	Water	3005A	
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	3005A	
480-136297-6	1315-BLANK-49D	Dissolved	Water	3005A	
MB 480-415980/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-415980/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 480-415980/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 417456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	6010C	415980
480-136297-2	1315-PC6-49D	Dissolved	Water	6010C	415980
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	6010C	415980
480-136297-4	1315-CC3-49D	Dissolved	Water	6010C	415980
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	6010C	415980
480-136297-6	1315-BLANK-49D	Dissolved	Water	6010C	415980
MB 480-415980/1-A	Method Blank	Total Recoverable	Water	6010C	415980
LCS 480-415980/2-A	Lab Control Sample	Total Recoverable	Water	6010C	415980
LCSD 480-415980/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	415980

General Chemistry

Analysis Batch: 416093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	9056A	
480-136297-2	1315-PC6-49D	Dissolved	Water	9056A	
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	9056A	
480-136297-4	1315-CC3-49D	Dissolved	Water	9056A	
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	9056A	
480-136297-6	1315-BLANK-49D	Dissolved	Water	9056A	
MB 480-416093/29	Method Blank	Total/NA	Water	9056A	
LCS 480-416093/28	Lab Control Sample	Total/NA	Water	9056A	
480-136297-3 MS	1315-PC3FS1-49D	Dissolved	Water	9056A	
480-136297-3 MSD	1315-PC3FS1-49D	Dissolved	Water	9056A	

Analysis Batch: 416644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-2	1315-PC6-49D	Dissolved	Water	9056A	
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	9056A	
MB 480-416644/5	Method Blank	Total/NA	Water	9056A	
LCS 480-416644/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 417167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	SM 2320B	
480-136297-2	1315-PC6-49D	Dissolved	Water	SM 2320B	
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	SM 2320B	
480-136297-4	1315-CC3-49D	Dissolved	Water	SM 2320B	

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

General Chemistry (Continued)

Analysis Batch: 417167 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	SM 2320B	
480-136297-6	1315-BLANK-49D	Dissolved	Water	SM 2320B	
MB 480-417167/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-417167/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-417167/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-417167/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 417969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	SM 2540C	
480-136297-2	1315-PC6-49D	Dissolved	Water	SM 2540C	
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	SM 2540C	
480-136297-4	1315-CC3-49D	Dissolved	Water	SM 2540C	
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	SM 2540C	
480-136297-6	1315-BLANK-49D	Dissolved	Water	SM 2540C	
MB 480-417969/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-417969/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-136297-1 DU	1315-PC3-49D	Dissolved	Water	SM 2540C	

Analysis Batch: 419704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-2	1315-PC6-49D	Dissolved	Water	9060A	
480-136297-3	1315-PC3FS1-49D	Dissolved	Water	9060A	
480-136297-4	1315-CC3-49D	Dissolved	Water	9060A	
480-136297-5	1315-PC3HLDM-49D	Dissolved	Water	9060A	
480-136297-6	1315-BLANK-49D	Dissolved	Water	9060A	
MB 480-419704/3	Method Blank	Dissolved	Water	9060A	
LCS 480-419704/4	Lab Control Sample	Dissolved	Water	9060A	

Analysis Batch: 419710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136297-1	1315-PC3-49D	Dissolved	Water	9060A	
MB 480-419710/3	Method Blank	Dissolved	Water	9060A	
LCS 480-419710/4	Lab Control Sample	Dissolved	Water	9060A	

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: BaillyTreatability Study

TestAmerica Job ID: 480-136297-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	03-31-19
Oklahoma	State Program	6	9421	08-31-18
Oregon	NELAP	10	NY200003	06-09-19
Pennsylvania	NELAP	3	68-00281	07-31-18 *
Rhode Island	State Program	1	LAO00328	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18 *
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: 5/18



COC #: _____

PAGE: 1 430-136297 CO

Project Name: Bailly Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information						Methods for Analysis						RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Diss. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 Week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1315-PC3-49D	5/21/18 1006	W	FS	N	X	X	X	X	X				X		
2	1315-PC6-49D	↓ 1010	↓	↓	↓	X	X	X	X	X				X		
3	1315-PC3FS1-49D	↓ 1020	↓	↓	↓	X	X	X	X	X				X		
4	1315-CC3-49D	↓ 1030	↓	↓	↓	X	X	X	X	X				X		
5	1315-PC3HDM-49D	↓ 1040	↓	↓	↓	X	X	X	X	X				X		
6	1315-BLANK-49D	↓ 1050	↓	↓	↓	X	X	X	X	X				X		
7																
8																
9																
10																
11																
12																

Sampler's Signature: <i>Jonicea Bradley</i>	Date: 5/21/18	Time: 1051	For Lab Use Does COC match samples: <input checked="" type="radio"/> Y or N Broken Container: Y or N COC seal intact: Y or N Other problems: Y or N WSDOT contacted: Y or N Date contacted: _____ Cooler Temperature at receipt: <u>21.4#</u> °C	Comments: X=Analyze H=Hold Analysis Request Standard TAT Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT: _____
Relinquished By/Affiliation: <i>Jonicea Bradley</i>	Date: 5/21/18	Time: 13:47		
Received By: <i>Sy 2gr</i>	Date: 5/21/18	Time: 13:47		
Relinquished By/Affiliation: <i>Sy 2gr</i>	Date: 5/21/18	Time: 16:02		
Received By: <i>Sy 2gr</i>	Date: 5/21/18	Time: 16:02		
Relinquished By/Affiliation: _____	Date: _____	Time: _____		
Received By (LAB): <i>Charkow Cokolb TA</i>	Date: 5/22/18	Time: 0950		



Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-136297-1

Login Number: 136297

List Number: 1

Creator: Harper, Marcus D

List Source: TestAmerica Buffalo

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.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



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: 480-136900-1

Client Project/Site: Bailly Treatability Study

For:

Wood E&I Solutions Inc

271 Mill Road

Chelmsford, Massachusetts 01824

Attn: Ms. Denise King



Authorized for release by:

6/20/2018 1:19:14 PM

Rebecca Jones, Project Management Assistant I

rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II

(716)504-9838

john.schove@testamericainc.com

LINKS

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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.

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Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-136900-1	1315-PC3-63D	Water	06/04/18 10:00	06/05/18 10:15
480-136900-2	1315-PC6-63D	Water	06/04/18 10:10	06/05/18 10:15
480-136900-3	1315-PC3FS1-63D	Water	06/04/18 10:20	06/05/18 10:15
480-136900-4	1315-CC3-63D	Water	06/04/18 10:30	06/05/18 10:15
480-136900-5	1315-PC3HLDM-63D	Water	06/04/18 10:40	06/05/18 10:15
480-136900-6	1315-BLANK-63D	Water	06/04/18 10:50	06/05/18 10:15

- 1
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- 12
- 13

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method	Method Description	Protocol	Laboratory
6010C	Dissolved Metals	SW846	TAL BUF
9056A	Anions, Ion Chromatography	SW846	TAL BUF
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF

Protocol References:

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

Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Job ID: 480-136900-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-136900-1**

Comments

No additional comments.

Receipt

The samples were received on 6/5/2018 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

HPLC/IC

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: 1315-PC6-63D (480-136900-2) and 1315-PC3HLDM-63D (480-136900-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The continuing calibration verification (CCV) associated with batch 480-418775 recovered above the upper control limit for sulfate. The sample associated with this CCV was non-detects for the affected analyte; therefore, the data have been reported. The following sample is impacted: 1315-BLANK-63D (480-136900-6).

Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: 1315-PC6-63D (480-136900-2). Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

Method(s) SM 2320B: The following sample(s) was received with headspace in the sample container. This sample container was received with headspace. 1315-PC3-63D (480-136900-1), 1315-PC6-63D (480-136900-2), 1315-PC3FS1-63D (480-136900-3), 1315-CC3-63D (480-136900-4), 1315-PC3HLDM-63D (480-136900-5) and 1315-BLANK-63D (480-136900-6).

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



Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-PC3-63D

Lab Sample ID: 480-136900-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	2.5		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.012	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.32	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	31		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.068	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.57		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	16	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.3		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	6.4		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	3.8	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	97		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	190	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC6-63D

Lab Sample ID: 480-136900-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.5		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.031		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.36	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	18		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.099	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.44		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	9.9	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.5		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	6.4		4.0	0.70	mg/L	2		9056A	Dissolved
Dissolved Organic Carbon	4.1	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	60		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	130	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3FS1-63D

Lab Sample ID: 480-136900-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	0.80		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.036		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.26	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	26		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.13	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.13		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	7.8	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.0098	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.1		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	22		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	60		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	160	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-CC3-63D

Lab Sample ID: 480-136900-4

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-CC3-63D (Continued)

Lab Sample ID: 480-136900-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	1.5		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.39	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	26		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.070	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.20		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	4.8	B	0.50	0.10	mg/L	1		6010C	Dissolved
Selenium, Dissolved	0.012	J	0.025	0.0087	mg/L	1		6010C	Dissolved
Sodium, Dissolved	1.1		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	16		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	3.2	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	61		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	150	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-PC3HLDM-63D

Lab Sample ID: 480-136900-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum, Dissolved	3.2		0.20	0.060	mg/L	1		6010C	Dissolved
Arsenic, Dissolved	0.010	J	0.015	0.0056	mg/L	1		6010C	Dissolved
Boron, Dissolved	0.23	B	0.020	0.0040	mg/L	1		6010C	Dissolved
Calcium, Dissolved	42		0.50	0.10	mg/L	1		6010C	Dissolved
Magnesium, Dissolved	0.045	J	0.20	0.043	mg/L	1		6010C	Dissolved
Molybdenum, Dissolved	0.35		0.010	0.0036	mg/L	1		6010C	Dissolved
Potassium, Dissolved	15	B	0.50	0.10	mg/L	1		6010C	Dissolved
Sodium, Dissolved	2.1		1.0	0.32	mg/L	1		6010C	Dissolved
Sulfate, Dissolved	7.9		2.0	0.35	mg/L	1		9056A	Dissolved
Dissolved Organic Carbon	3.1	B	1.0	0.43	mg/L	1		9060A	Dissolved
Alkalinity, Dissolved	110		5.0	0.79	mg/L	1		SM 2320B	Dissolved
Total Dissolved Solids	200	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: 1315-BLANK-63D

Lab Sample ID: 480-136900-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	41	B	10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-PC3-63D

Lab Sample ID: 480-136900-1

Date Collected: 06/04/18 10:00

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	2.5		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:28	1
Arsenic, Dissolved	0.012	J	0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:28	1
Boron, Dissolved	0.32	B	0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:28	1
Calcium, Dissolved	31		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:28	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:28	1
Magnesium, Dissolved	0.068	J	0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:28	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:28	1
Molybdenum, Dissolved	0.57		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:28	1
Potassium, Dissolved	16	B	0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:28	1
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:28	1
Sodium, Dissolved	2.3		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:28	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 15:57	1
Sulfate, Dissolved	6.4		2.0	0.35	mg/L			06/13/18 15:03	1
Dissolved Organic Carbon	3.8	B	1.0	0.43	mg/L			06/15/18 01:26	1
Alkalinity, Dissolved	97		5.0	0.79	mg/L			06/11/18 19:13	1
Total Dissolved Solids	190	B	10	4.0	mg/L			06/11/18 15:30	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-PC6-63D

Lab Sample ID: 480-136900-2

Date Collected: 06/04/18 10:10

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.5		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:32	1
Arsenic, Dissolved	0.031		0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:32	1
Boron, Dissolved	0.36	B	0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:32	1
Calcium, Dissolved	18		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:32	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:32	1
Magnesium, Dissolved	0.099	J	0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:32	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:32	1
Molybdenum, Dissolved	0.44		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:32	1
Potassium, Dissolved	9.9	B	0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:32	1
Selenium, Dissolved	0.011	J	0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:32	1
Sodium, Dissolved	1.5		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			06/09/18 16:12	2
Sulfate, Dissolved	6.4		4.0	0.70	mg/L			06/13/18 15:44	2
Dissolved Organic Carbon	4.1	B	1.0	0.43	mg/L			06/15/18 05:54	1
Alkalinity, Dissolved	60		5.0	0.79	mg/L			06/11/18 19:21	1
Total Dissolved Solids	130	B	10	4.0	mg/L			06/11/18 15:30	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-PC3FS1-63D

Lab Sample ID: 480-136900-3

Date Collected: 06/04/18 10:20

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	0.80		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:36	1
Arsenic, Dissolved	0.036		0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:36	1
Boron, Dissolved	0.26	B	0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:36	1
Calcium, Dissolved	26		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:36	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:36	1
Magnesium, Dissolved	0.13	J	0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:36	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:36	1
Molybdenum, Dissolved	0.13		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:36	1
Potassium, Dissolved	7.8	B	0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:36	1
Selenium, Dissolved	0.0098	J	0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:36	1
Sodium, Dissolved	1.1		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:36	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 17:39	1
Sulfate, Dissolved	22		2.0	0.35	mg/L			06/13/18 15:52	1
Dissolved Organic Carbon	2.4	B	1.0	0.43	mg/L			06/15/18 06:24	1
Alkalinity, Dissolved	60		5.0	0.79	mg/L			06/11/18 19:28	1
Total Dissolved Solids	160	B	10	4.0	mg/L			06/11/18 15:30	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-CC3-63D

Lab Sample ID: 480-136900-4

Date Collected: 06/04/18 10:30

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	1.5		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:39	1
Arsenic, Dissolved	0.072		0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:39	1
Boron, Dissolved	0.39	B	0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:39	1
Calcium, Dissolved	26		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:39	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:39	1
Magnesium, Dissolved	0.070	J	0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:39	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:39	1
Molybdenum, Dissolved	0.20		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:39	1
Potassium, Dissolved	4.8	B	0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:39	1
Selenium, Dissolved	0.012	J	0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:39	1
Sodium, Dissolved	1.1		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:39	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 17:54	1
Sulfate, Dissolved	16		2.0	0.35	mg/L			06/13/18 16:00	1
Dissolved Organic Carbon	3.2	B	1.0	0.43	mg/L			06/15/18 06:54	1
Alkalinity, Dissolved	61		5.0	0.79	mg/L			06/11/18 19:36	1
Total Dissolved Solids	150	B	10	4.0	mg/L			06/11/18 15:30	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-PC3HLDM-63D

Lab Sample ID: 480-136900-5

Date Collected: 06/04/18 10:40

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	3.2		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:43	1
Arsenic, Dissolved	0.010	J	0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:43	1
Boron, Dissolved	0.23	B	0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:43	1
Calcium, Dissolved	42		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:43	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:43	1
Magnesium, Dissolved	0.045	J	0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:43	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:43	1
Molybdenum, Dissolved	0.35		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:43	1
Potassium, Dissolved	15	B	0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:43	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:43	1
Sodium, Dissolved	2.1		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:43	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		1.0	0.56	mg/L			06/09/18 18:08	2
Sulfate, Dissolved	7.9		2.0	0.35	mg/L			06/13/18 16:08	1
Dissolved Organic Carbon	3.1	B	1.0	0.43	mg/L			06/15/18 07:24	1
Alkalinity, Dissolved	110		5.0	0.79	mg/L			06/11/18 19:44	1
Total Dissolved Solids	200	B	10	4.0	mg/L			06/11/18 15:30	1

Client Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Client Sample ID: 1315-BLANK-63D

Lab Sample ID: 480-136900-6

Date Collected: 06/04/18 10:50

Matrix: Water

Date Received: 06/05/18 10:15

Method: 6010C - Dissolved Metals - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 19:46	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 19:46	1
Boron, Dissolved	ND		0.020	0.0040	mg/L		06/07/18 10:58	06/08/18 19:46	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:46	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 19:46	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		06/07/18 10:58	06/08/18 19:46	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 19:46	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 19:46	1
Potassium, Dissolved	ND		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 19:46	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 19:46	1
Sodium, Dissolved	ND		1.0	0.32	mg/L		06/07/18 10:58	06/08/18 19:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 18:23	1
Sulfate, Dissolved	ND	^	2.0	0.35	mg/L			06/09/18 18:23	1
Dissolved Organic Carbon	ND		1.0	0.43	mg/L			06/16/18 02:33	1
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			06/11/18 19:50	1
Total Dissolved Solids	41	B	10	4.0	mg/L			06/11/18 15:30	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method: 6010C - Dissolved Metals

Lab Sample ID: MB 480-418358/1-A
Matrix: Water
Analysis Batch: 418787

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 418358

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum, Dissolved	ND		0.20	0.060	mg/L		06/07/18 10:58	06/08/18 18:12	1
Arsenic, Dissolved	ND		0.015	0.0056	mg/L		06/07/18 10:58	06/08/18 18:12	1
Calcium, Dissolved	ND		0.50	0.10	mg/L		06/07/18 10:58	06/08/18 18:12	1
Iron, Dissolved	ND		0.050	0.019	mg/L		06/07/18 10:58	06/08/18 18:12	1
Magnesium, Dissolved	ND		0.20	0.043	mg/L		06/07/18 10:58	06/08/18 18:12	1
Manganese, Dissolved	ND		0.0030	0.00040	mg/L		06/07/18 10:58	06/08/18 18:12	1
Molybdenum, Dissolved	ND		0.010	0.0036	mg/L		06/07/18 10:58	06/08/18 18:12	1
Selenium, Dissolved	ND		0.025	0.0087	mg/L		06/07/18 10:58	06/08/18 18:12	1
Sodium, Dissolved	0.370	J	1.0	0.32	mg/L		06/07/18 10:58	06/08/18 18:12	1

Lab Sample ID: MB 480-418358/1-A
Matrix: Water
Analysis Batch: 419109

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 418358

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron, Dissolved	0.00466	J	0.020	0.0040	mg/L		06/07/18 10:58	06/11/18 16:08	1
Potassium, Dissolved	0.102	J	0.50	0.10	mg/L		06/07/18 10:58	06/11/18 16:08	1

Lab Sample ID: LCS 480-418358/2-A
Matrix: Water
Analysis Batch: 418787

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 418358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum, Dissolved	10.0	9.25		mg/L		92	80 - 120
Arsenic, Dissolved	0.200	0.204		mg/L		102	80 - 120
Calcium, Dissolved	10.0	9.66		mg/L		97	80 - 120
Iron, Dissolved	10.0	9.43		mg/L		94	80 - 120
Magnesium, Dissolved	10.0	9.97		mg/L		100	80 - 120
Manganese, Dissolved	0.200	0.203		mg/L		101	80 - 120
Molybdenum, Dissolved	0.200	0.190		mg/L		95	80 - 120
Selenium, Dissolved	0.200	0.189		mg/L		94	80 - 120
Sodium, Dissolved	10.0	9.76		mg/L		97	80 - 120

Lab Sample ID: LCS 480-418358/2-A
Matrix: Water
Analysis Batch: 419109

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 418358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron, Dissolved	0.200	0.205		mg/L		102	80 - 120
Potassium, Dissolved	10.0	9.86		mg/L		99	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 480-418775/28
Matrix: Water
Analysis Batch: 418775

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 17:25	1

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 480-418775/28

Matrix: Water

Analysis Batch: 418775

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate, Dissolved	0.637	J ^	2.0	0.35	mg/L			06/09/18 17:25	1

Lab Sample ID: MB 480-418775/4

Matrix: Water

Analysis Batch: 418775

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/09/18 10:40	1
Sulfate, Dissolved	0.631	J	2.0	0.35	mg/L			06/09/18 10:40	1

Lab Sample ID: LCS 480-418775/27

Matrix: Water

Analysis Batch: 418775

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	53.1		mg/L		106	90 - 110
Sulfate, Dissolved	50.0	52.9	^	mg/L		106	90 - 110

Lab Sample ID: LCS 480-418775/3

Matrix: Water

Analysis Batch: 418775

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	53.5		mg/L		107	90 - 110
Sulfate, Dissolved	50.0	52.7		mg/L		105	90 - 110

Lab Sample ID: MB 480-419389/5

Matrix: Water

Analysis Batch: 419389

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride, Dissolved	ND		0.50	0.28	mg/L			06/13/18 14:14	1
Sulfate, Dissolved	ND		2.0	0.35	mg/L			06/13/18 14:14	1

Lab Sample ID: LCS 480-419389/4

Matrix: Water

Analysis Batch: 419389

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	50.0	50.0		mg/L		100	90 - 110
Sulfate, Dissolved	50.0	49.5		mg/L		99	90 - 110

Lab Sample ID: 480-136900-2 MS

Matrix: Water

Analysis Batch: 418775

Client Sample ID: 1315-PC6-63D

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		100	110		mg/L		110	81 - 120

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-136900-1 MS
Matrix: Water
Analysis Batch: 419389

Client Sample ID: 1315-PC3-63D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride, Dissolved	ND		50.0	52.8		mg/L		106	81 - 120
Sulfate, Dissolved	6.4		50.0	58.9		mg/L		105	80 - 120

Lab Sample ID: 480-136900-1 MSD
Matrix: Water
Analysis Batch: 419389

Client Sample ID: 1315-PC3-63D
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride, Dissolved	ND		50.0	52.4		mg/L		105	81 - 120	1	20
Sulfate, Dissolved	6.4		50.0	58.7		mg/L		105	80 - 120	0	20

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 480-419939/1
Matrix: Water
Analysis Batch: 419939

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.564	J	1.0	0.43	mg/L			06/14/18 14:48	1

Lab Sample ID: MB 480-419939/8
Matrix: Water
Analysis Batch: 419939

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.578	J	1.0	0.43	mg/L			06/15/18 02:55	1

Lab Sample ID: LCS 480-419939/2
Matrix: Water
Analysis Batch: 419939

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	56.7		mg/L		94	90 - 110

Lab Sample ID: LCS 480-419939/9
Matrix: Water
Analysis Batch: 419939

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	55.9		mg/L		93	90 - 110

Lab Sample ID: MB 480-420211/3
Matrix: Water
Analysis Batch: 420211

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.482	J	1.0	0.43	mg/L			06/15/18 20:35	1

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method: 9060A - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCS 480-420211/4
Matrix: Water
Analysis Batch: 420211

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	60.0	56.5		mg/L		94	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-419073/30
Matrix: Water
Analysis Batch: 419073

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			06/11/18 20:08	1

Lab Sample ID: MB 480-419073/7
Matrix: Water
Analysis Batch: 419073

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Dissolved	ND		5.0	0.79	mg/L			06/11/18 17:26	1

Lab Sample ID: LCS 480-419073/31
Matrix: Water
Analysis Batch: 419073

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	93.5		mg/L		93	90 - 110

Lab Sample ID: LCS 480-419073/8
Matrix: Water
Analysis Batch: 419073

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Dissolved	100	93.1		mg/L		93	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-419004/1
Matrix: Water
Analysis Batch: 419004

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4.00	J	10	4.0	mg/L			06/11/18 15:30	1

Lab Sample ID: LCS 480-419004/2
Matrix: Water
Analysis Batch: 419004

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	518	551		mg/L		106	85 - 115

TestAmerica Buffalo

QC Sample Results

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 480-136900-6 DU
 Matrix: Water
 Analysis Batch: 419004

Client Sample ID: 1315-BLANK-63D
 Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	41	B	41.0		mg/L		0	10

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

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

Metals

Prep Batch: 418358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	3005A	
480-136900-2	1315-PC6-63D	Dissolved	Water	3005A	
480-136900-3	1315-PC3FS1-63D	Dissolved	Water	3005A	
480-136900-4	1315-CC3-63D	Dissolved	Water	3005A	
480-136900-5	1315-PC3HLDM-63D	Dissolved	Water	3005A	
480-136900-6	1315-BLANK-63D	Dissolved	Water	3005A	
MB 480-418358/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 480-418358/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 418787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	6010C	418358
480-136900-2	1315-PC6-63D	Dissolved	Water	6010C	418358
480-136900-3	1315-PC3FS1-63D	Dissolved	Water	6010C	418358
480-136900-4	1315-CC3-63D	Dissolved	Water	6010C	418358
480-136900-5	1315-PC3HLDM-63D	Dissolved	Water	6010C	418358
480-136900-6	1315-BLANK-63D	Dissolved	Water	6010C	418358
MB 480-418358/1-A	Method Blank	Total Recoverable	Water	6010C	418358
LCS 480-418358/2-A	Lab Control Sample	Total Recoverable	Water	6010C	418358

Analysis Batch: 419109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-418358/1-A	Method Blank	Total Recoverable	Water	6010C	418358
LCS 480-418358/2-A	Lab Control Sample	Total Recoverable	Water	6010C	418358

General Chemistry

Analysis Batch: 418775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	9056A	
480-136900-2	1315-PC6-63D	Dissolved	Water	9056A	
480-136900-3	1315-PC3FS1-63D	Dissolved	Water	9056A	
480-136900-4	1315-CC3-63D	Dissolved	Water	9056A	
480-136900-5	1315-PC3HLDM-63D	Dissolved	Water	9056A	
480-136900-6	1315-BLANK-63D	Dissolved	Water	9056A	
MB 480-418775/28	Method Blank	Total/NA	Water	9056A	
MB 480-418775/4	Method Blank	Total/NA	Water	9056A	
LCS 480-418775/27	Lab Control Sample	Total/NA	Water	9056A	
LCS 480-418775/3	Lab Control Sample	Total/NA	Water	9056A	
480-136900-2 MS	1315-PC6-63D	Dissolved	Water	9056A	

Analysis Batch: 419004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	SM 2540C	
480-136900-2	1315-PC6-63D	Dissolved	Water	SM 2540C	
480-136900-3	1315-PC3FS1-63D	Dissolved	Water	SM 2540C	
480-136900-4	1315-CC3-63D	Dissolved	Water	SM 2540C	
480-136900-5	1315-PC3HLDM-63D	Dissolved	Water	SM 2540C	
480-136900-6	1315-BLANK-63D	Dissolved	Water	SM 2540C	
MB 480-419004/1	Method Blank	Total/NA	Water	SM 2540C	

TestAmerica Buffalo

QC Association Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

General Chemistry (Continued)

Analysis Batch: 419004 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-419004/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-136900-6 DU	1315-BLANK-63D	Dissolved	Water	SM 2540C	

Analysis Batch: 419073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	SM 2320B	
480-136900-2	1315-PC6-63D	Dissolved	Water	SM 2320B	
480-136900-3	1315-PC3F51-63D	Dissolved	Water	SM 2320B	
480-136900-4	1315-CC3-63D	Dissolved	Water	SM 2320B	
480-136900-5	1315-PC3HLD63D	Dissolved	Water	SM 2320B	
480-136900-6	1315-BLANK-63D	Dissolved	Water	SM 2320B	
MB 480-419073/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-419073/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-419073/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-419073/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 419389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	9056A	
480-136900-2	1315-PC6-63D	Dissolved	Water	9056A	
480-136900-3	1315-PC3F51-63D	Dissolved	Water	9056A	
480-136900-4	1315-CC3-63D	Dissolved	Water	9056A	
480-136900-5	1315-PC3HLD63D	Dissolved	Water	9056A	
MB 480-419389/5	Method Blank	Total/NA	Water	9056A	
LCS 480-419389/4	Lab Control Sample	Total/NA	Water	9056A	
480-136900-1 MS	1315-PC3-63D	Dissolved	Water	9056A	
480-136900-1 MSD	1315-PC3-63D	Dissolved	Water	9056A	

Analysis Batch: 419939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-1	1315-PC3-63D	Dissolved	Water	9060A	
480-136900-2	1315-PC6-63D	Dissolved	Water	9060A	
480-136900-3	1315-PC3F51-63D	Dissolved	Water	9060A	
480-136900-4	1315-CC3-63D	Dissolved	Water	9060A	
480-136900-5	1315-PC3HLD63D	Dissolved	Water	9060A	
MB 480-419939/1	Method Blank	Dissolved	Water	9060A	
MB 480-419939/8	Method Blank	Dissolved	Water	9060A	
LCS 480-419939/2	Lab Control Sample	Dissolved	Water	9060A	
LCS 480-419939/9	Lab Control Sample	Dissolved	Water	9060A	

Analysis Batch: 420211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-136900-6	1315-BLANK-63D	Dissolved	Water	9060A	
MB 480-420211/3	Method Blank	Dissolved	Water	9060A	
LCS 480-420211/4	Lab Control Sample	Dissolved	Water	9060A	

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
 Project/Site: Bailly Treatability Study

TestAmerica Job ID: 480-136900-1

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	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18 *
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
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	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-18 *
Michigan	State Program	5	9937	03-31-19
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	03-31-19
Oklahoma	State Program	6	9421	08-31-18
Oregon	NELAP	10	NY200003	06-09-19
Pennsylvania	NELAP	3	68-00281	07-31-18 *
Rhode Island	State Program	1	LAO00328	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-18 *
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18

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



Amec Foster Wheeler Environment & Infrastructure
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

SHIP TO:
 TestAmerica
 10 Hazelwood Drive
 Amherst, NY 14228
 (716) 504-9838

CHAIN OF CUSTODY

DATE: _____

COC #: _____

PAGE: _____



480-136900 COC
 UF

Project Name: Bailey Treatability Study	Project Contact: Denise King	Bill To: NiSource	Disposal Instructions: LAB
Project Number: 377882016	Phone Number: 978-392-5339		Shipment Method: FEDEX
Project Manager: Russell Johnson	Project Phase: 2400		Waybill Number: N/A

Sample Information						Methods for Analysis						RUSH				
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Diss. Metals (Ca, Mg, Na, K, Fe, Al, B, Mn, Mo, Se, and As)	Alkalinity	Chloride and Sulfate	TDS	Dissolved Organic Carbon	1 Week	2 Week	48 Hour	STANDARD	TOTAL BOTTLES	HOLD All Analyses
1	1315-PC3-63D	6/4/18 1000	W	FS	N	X	X	X	X	X				X	6	
2	1315-PC6-63D	↓ 1010	↓	↓	↓	X	X	X	X	X				X		
3	1315-PC3FS1-63D	↓ 1020	↓	↓	↓	X	X	X	X	X				X		
4	1315-CC3-63D	↓ 1030	↓	↓	↓	X	X	X	X	X				X		
5	1315-PC3HLDM-63D	↓ 1040	↓	↓	↓	X	X	X	X	X				X		
6	1315-BLANK-63D	↓ 1050	↓	↓	↓	X	X	X	X	X				X		
7																
8																
9																
10																
11																
12																

Sampler's Signature: <i>Jamie Bradley</i>	Date: 6/4/18	Time: 1000	For Lab Use	Comments:
Relinquished By/Affiliation: <i>Jamie Bradley</i>	Date: 6/4/18	Time: 13:00		
Received By: <i>[Signature]</i>	Date: 6/4/18	Time: 13:00	Does COC match samples: Y or N	X=Analyze H=Hold Analysis Request Standard TAT Samples are LEAF Method 1315 extractants and have been field filtered Shipped from Kemron - Atlanta GA NUMBER OF COOLERS SENT:
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 6/4/18	Time: 13:00	Broken Container: Y or N	
Received By: <i>[Signature]</i>	Date: 6/4/18	Time: 16:00	COC seal intact: Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 6/4/18	Time: 16:00	Other problems: Y or N	
Received By: <i>[Signature]</i>	Date: 6/4/18	Time: 16:00	WSDOT contacted: Y or N	
Relinquished By/Affiliation: <i>[Signature]</i>	Date: 6/4/18	Time: 16:00	Date contacted:	
Received By (LAB): <i>Chaukhaw Cokob</i>	Date: 6/15/18	Time: 10:15	Cooler Temperature at receipt: 2.7 °C #1ICE	



Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 480-136900-1

Login Number: 136900

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.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Johnson, Russell A

From: King, Denise
Sent: Tuesday, January 09, 2018 5:58 PM
To: Johnson, Russell A
Subject: RE: TestAmerica EDD and report files from 480-128745-1 Bailly Generating Station

Hi Russ,

I reviewed the Level II report and data is suitable for use. No data would be rejected.

Thanks,

Denise King

Senior Environmental Chemist
Direct: +1 (978) 392-5339
Mobile: +1 (508) 789-1738
Denise.King@woodplc.com



From: Johnson, Russell A
Sent: Tuesday, January 09, 2018 1:16 PM
To: King, Denise <Denise.King@amecfw.com>; Nelson, Andrew K (Westford) <andrew.nelson@amecfw.com>
Cc: Bevier, Marie L <Marie.Bevier@amecfw.com>
Subject: FW: TestAmerica EDD and report files from 480-128745-1 Bailly Generating Station

Denise – per our discussion, this SDG will not require validation, just a chemist review, which you have offered to complete. Andrew – looking for a cross-tab once the EDD is loaded.

Marie – I include you as I noted John Schove sent the lab report to you in a separate e-mail.

Thank you.

377882016.1200.****

Russell A. Johnson, LEP

Program Manager
Direct: +1 (978) 392 5336
Mobile: +1 (508) 954 2518
www.woodplc.com



*Doing Business as Amec Foster Wheeler
Environment & Infrastructure, Inc.*

From: King, Denise [<mailto:denise.king@woodplc.com>]
Sent: Tuesday, January 09, 2018 11:19 AM
To: Johnson, Russell A <russell.johnson2@woodplc.com>
Subject: FW: TestAmerica EDD and report files from 480-128745-1 Bailly Generating Station

Denise King

Senior Environmental Chemist
Direct: +1 (978) 392-5339
Mobile: +1 (508) 789-1738
Denise.King@woodplc.com



From: Schove, John [<mailto:john.schove@testamericainc.com>]
Sent: Tuesday, January 09, 2018 11:10 AM
To: Nelson, Andrew K (Westford) <andrew.nelson@amecfw.com>; King, Denise <Denise.King@amecfw.com>
Subject: TestAmerica EDD and report files from 480-128745-1 Bailly Generating Station

Hello,

Attached please find the EDD and report files for job 480-128745-1; Bailly Generating Station

Please feel free to contact me if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

JOHN R SCHOVE
Project Manager

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.504.9838
www.testamericainc.com

Reference: [347010]
Attachments: 2

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Johnson, Russell A

From: King, Denise
Sent: Thursday, January 25, 2018 5:32 PM
To: Johnson, Russell A; Nelson, Andrew K (Westford)
Cc: Penta, Elizabeth
Subject: RE: TestAmerica EDD and report files from 480-130057-1 Bailly Generating Station

Hi Russ,

Liz has reviewed the report and no data would be rejected. Due to blank detections of DOC, the DOC results for samples AREA #1 T01, AREA #1 T02, AREA #1 T03, AREA #1 T04, AREA #1 BLANK, AREA #2 T01, AREA #2 T02, AREA #2 T03, AREA #2 BLANK and AREA #3 BLANK would be changed to ND at the reporting limit of 1.0mg/L.

I believe that Liz requested an EDD from Andrew so we can ensure the edits are made to the database.

Thanks,

Denise King

Senior Environmental Chemist
Direct: +1 (978) 392-5339
Mobile: +1 (508) 789-1738
Denise.King@woodplc.com



From: Johnson, Russell A
Sent: Friday, January 19, 2018 5:54 PM
To: Nelson, Andrew K (Westford) <andrew.nelson@amecfw.com>
Cc: King, Denise <Denise.King@amecfw.com>
Subject: RE: TestAmerica EDD and report files from 480-130057-1 Bailly Generating Station

Yes. It's treatability study data. We can discuss how it can be identified in the database next week. It won't be validated, but I do plan to have Denise look it over for any obvious deficiencies.

Russell A. Johnson, LEP

Program Manager
Direct: +1 (978) 392 5336
Mobile: +1 (508) 954 2518
www.woodplc.com



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Environment & Infrastructure, Inc.*

From: Nelson, Andrew K (Westford)
Sent: Friday, January 19, 2018 12:30 PM
To: Johnson, Russell A <russell.johnson2@amecfw.com>
Subject: FW: TestAmerica EDD and report files from 480-130057-1 Bailly Generating Station

Russ, is this something that you want me to load to the NIPSCO database? I don't recognize the Sample ID nomenclature, so I thought I should ask in the event that you don't want me to upload to the database.

Andrew

From: Jones, Rebecca [<mailto:rebecca.jones@testamericainc.com>]
Sent: Friday, January 19, 2018 12:05 PM
To: Nelson, Andrew K (Westford) <andrew.nelson@amecfw.com>; King, Denise <Denise.King@amecfw.com>
Subject: TestAmerica EDD and report files from 480-130057-1 Bailly Generating Station

Hello,

Attached please find the EDD and report files for job 480-130057-1; Bailly Generating Station

Please feel free to contact me or your PM John Schove if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

REBECCA M JONES
Project Manager Assistant

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.691,2600
www.testamericainc.com

Reference: [348549]
Attachments: 2

Johnson, Russell A

From: King, Denise
Sent: Monday, April 16, 2018 3:12 PM
To: Johnson, Russell A; Nelson, Andrew K (Westford)
Cc: Penta, Elizabeth
Subject: FW: TestAmerica EDD and report files from 480-132907-1 Bailly Treatability Study
Attachments: qryGetAMECData_480-132907-1_EP.xlsx

Hi Russ and Andrew,

Andrew – Attached is the validated EDD.

Russ – Below is data review write-up.

SDG 480-132907-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. The laboratory was instructed to prepare a laboratory duplicate for each sample submitted. Although these laboratory duplicates were logged in the LIMS as discrete samples they have been appropriately coded in the project database as laboratory duplicates. The relative percent difference between the primary samples and their laboratory duplicates were all < 25%.

Below are quality control elements that fell outside of acceptance criteria.

- Due to the detection of sodium in the SPLP leachate blank, the sodium results for samples 1312-PC3-14D, 1312-PC6-14D, 1312-PC3FS1-14D, 1312-CC3-14D, and 1312-PC3HLDM-14D and the associated laboratory duplicates were U qualified as ND, at the reported concentrations.
- TOC was detected in the method blanks associated with all samples. All TOC sample results were > 5X the blank concentrations and no qualifications were necessary.
- Sample 1312-PC3HLDM-14D DUP was selected as the source for the MS/MSD. The MS recovery of boron was above the upper control limit at 131%. Samples 1312-PC3HLDM-14D and 1312-PC3HLDM-14D DUP were ND for boron and not impacted by the potential high bias.

Thanks,

Denise King

Senior Environmental Chemist

Direct: +1 (978) 392-5339

Mobile: +1 (508) 789-1738

Denise.King@woodplc.com

The logo for Wood, featuring the word "wood." in a bold, lowercase, sans-serif font. The "o" in "wood" is stylized with a horizontal line through it.

From: Penta, Elizabeth [mailto:elizabeth.penta@woodplc.com]
Sent: Thursday, April 05, 2018 5:03 PM
To: King, Denise <denise.king@woodplc.com>
Subject: RE: TestAmerica EDD and report files from 480-132907-1 Bailly Treatability Study

Denise,

The validation Bailly EDD is attached and the data review summary text is below.

After review of SDG 480-132907-1 it was determined that no data would be rejected. Due to the detection of sodium in the leachate blank, the sodium results for samples 0669-001 (14 DAY), 0669-002 (14 DAY), 0669-003 (14 DAY), 0669-004 (14 DAY), and 0669-005 (14 DAY) were changed to ND at the reported concentration. TOC was detected in the method blanks associated with all samples. The TOC results in all samples were > AL and no qualification was necessary. Sample 0669-005 (14 DAY) DUP was selected as the source for the MS/MSD. The recovery of boron was above the upper control limit. Samples 0669-005 (14 DAY) and 0669-005 (14 DAY) DUP were ND for boron and not impacted by the potential high bias.

Liz

Elizabeth Penta
Environmental Chemist
Direct: +1 978 392 5366
Elizabeth.penta@woodplc.com www.woodplc.com



From: King, Denise [<mailto:denise.king@woodplc.com>]
Sent: Wednesday, April 04, 2018 3:18 PM
To: Penta, Elizabeth <elizabeth.penta@woodplc.com>
Subject: FW: TestAmerica EDD and report files from 480-132907-1 Bailly Treatability Study

Denise King
Senior Environmental Chemist
Direct: +1 (978) 392-5339
Mobile: +1 (508) 789-1738
Denise.King@woodplc.com



From: Nelson, Andrew K (Westford)
Sent: Wednesday, April 04, 2018 3:15 PM
To: King, Denise <Denise.King@amecfw.com>
Subject: FW: TestAmerica EDD and report files from 480-132907-1 Bailly Treatability Study

Hi Denise, attached is the EDD to validate for 480-132907-1 including the Lab Duplicate results.

Thanks,
Andrew

From: Jones, Rebecca [<mailto:rebecca.jones@testamericainc.com>]
Sent: Wednesday, April 04, 2018 12:45 PM
To: Andrew Nelson <andrew.nelson@woodplc.com>; Ms. Denise King <denise.king@woodplc.com>
Subject: TestAmerica EDD and report files from 480-132907-1 Bailly Treatability Study

Hello,

Attached please find the EDD and report files for job 480-132907-1; Bailly Treatability Study

Please feel free to contact me or your PM John Schove if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

REBECCA M JONES
Project Manager Assistant

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.691,2600
www.testamericainc.com

Reference: [359805]
Attachments: 2

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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Wednesday, April 25, 2018 2:24 PM
To: Johnson, Russell A
Subject: FW: Bailly SDG 480-133494-1 Review

Hi Russ,

Chemist review.

SDG 480-133494-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1312-PC3-28D, 1312-PC6-28D, 1312-PC3FS1-28D, 1312-CC3-28D, 1312-PC3HLDM-28D, 1312-PC3-28D-DUP, 1312-PC6-28D-DUP, 1312-PC3FS1-28D-DUP, 1312-CC3-28D-DUP, and 1312-PC3HLDM-28D-DUP.

Below are quality control elements that fell outside of acceptance criteria.

- Sodium was detected in the method blank at 2.24 mg/L associated with all samples. The sodium concentrations for all samples were < 5X the blank concentration and U qualified as ND at the reported concentrations.
- Sample 1312-PC3HLDM-28D was selected as the source for the MS/MSD. The MS/MSD recoveries of boron were above the upper control limit at 133% and 126%. Samples 1312-PC3HLDM-28D and 1312-PC3HLDM-28D-DUP were ND for boron and not impacted by the potential high bias.
- The MS/MSD recoveries of calcium were below the lower control limit at -16% and -152%. The recoveries do not apply because the native sample concentration was > 4X the spike amount added so no qualifications were necessary.
- Laboratory duplicate analysis was performed on sample 1312-PC6-28D. The relative percent difference (RPD) for arsenic (26%) was above the project acceptance limit of 25%. Arsenic was ND in sample 1312-PC6-28D and detected below the RL in sample 1312-PC6-28D-DUP so no qualifications were necessary.

Liz

Elizabeth Penta
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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Wednesday, April 25, 2018 5:10 PM
To: Johnson, Russell A
Subject: FW: Bailly SDG 480-133622-1 Review

Hi Russ,

Chemist review.

SDG 480-133622-1 was reviewed and it was determined that data is suitable for use and no data would be rejected.

Below are quality control elements that fell outside of acceptance criteria.

- Dissolved organic carbon (DOC) was detected in the laboratory blanks (0.649 mg/L and 0.68 mg/L). The DOC results for samples 1315-CC3-02H, 1315-PC3-02D, 1315-PC3-02H, 1315-PC3FS1-01D, 1315-PC3FS1-02H, 1315-PC3HLDM-02H, 1315-PC6-02D, and 1315-PC6-02H were U qualified as ND at the reported concentrations. The DOC results for samples 1315-CC3-01D, 1315-PC3-01D, 1315-PC3HLDM-01D and 1315-PC6-01D were > 5X the blank concentrations and no qualifications were necessary. DOC was not detected in samples 1315-PC3FS1-02D and 1315-BLANK-02H.
- Total dissolved solids (TDS) was detected in the laboratory blank (6.0 mg/L) associated with samples 1315-PC3-01D, 1315-PC6-01D, 1315-PC3FS1-01D, 1315-CC3-01D, 1315-PC3HLDM-01D, and 1315-BLANK-01D. The TDS results for all associated samples were > 5X the blank concentration and no qualifications were necessary.
- Alkalinity was detected in the blanks 1315-BLANK-02H (2.7 J mg/L) and 1315-BLANK-01D (1.2 J mg/L) provided by Kemron. All associated sample results were > 5X the blank concentration and no qualifications were necessary.
- DOC was detected in the blank 1315-BLANK-01D (1.6 mg/L) provided by Kemron. The DOC results for samples 1315-PC3-01D, 1315-PC6-01D, 1315-PC3FS1-01D, 1315-CC3-01D, and 1315-PC3HLDM-01D were detected < 5X to blank concentration and U qualified as ND at the reported concentrations.
- TDS was detected in the blank 1315-BLANK-02H (42 mg/L) provided by Kemron. The TDS results for samples 1315-CC3-02H, 1315-PC3-02H, 1315-PC3FS1-02H, 1315-PC3HLDM-02H and 1315-PC6-02H were U qualified as ND, at the reported concentrations.

Liz

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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Wednesday, April 25, 2018 2:21 PM
To: Johnson, Russell A
Subject: FW: Bailly SDG 480-133851-1 Review

Hi Russ,

Chemist review.

SDG 480-133851-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1315-PC3-07D, 1315-PC6-07D, 1315-PC3FS1-07D, 1315-CC3-07D, 1315-PC3HLDM-07D, and 1315-BLANK-07D

Below are quality control elements that fell outside of acceptance criteria.

- Manganese was detected in the laboratory blank (0.00283 J mg/L) and the blank 1315-BLANK-07D (0.0014 J mg/L) provided by Kemron. The manganese concentrations for all samples were < 5X the blank concentration and U qualified as ND at the RL.
- Sulfate was detected in the laboratory blank (0.376 J mg/L) associated with all samples. The sulfate results for samples were either ND or > 5X the blank concentration and no qualifications were necessary.
- Alkalinity and calcium were detected in the blank 1315-BLANK-07D provided by Kemron. The alkalinity and calcium results for all samples were >5X the blank concentration so no qualifications were necessary.

Liz

Elizabeth Penta
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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Thursday, April 26, 2018 12:02 PM
To: Johnson, Russell A
Subject: Chemist Review 480-134296-1

Hi Russ,

Chemist review. Validated EDD has been sent to Andrew.

SDG 480-134296-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. Below are quality control elements that fell outside of acceptance criteria.

- Total dissolved solids (TDS) was detected in the laboratory blank (9.0 J mg/L) and the blank 1315-Blank_14D (7.0 J mg/L) provided by Kemron. The TDS results for all associated samples were > 5X the blank concentration and no qualifications were necessary.
- Alkalinity was detected in the blank 1315-BLANK-14D (2.9 J mg/L) provided by Kemron. All associated sample results were > 5X the blank concentration and no qualifications were necessary.
- Calcium was detected in the blank 1315-BLANK-14D (0.11 J mg/L) provided by Kemron. All associated sample results were > 5X the blank concentration and no qualifications were necessary.

Thanks,

Denise King

Senior Environmental Chemist
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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Thursday, May 31, 2018 5:30 PM
To: Johnson, Russell A
Cc: Penta, Elizabeth
Subject: FW: TestAmerica EDD and report files from 480-135145-1 Bailly Treatability Study
Attachments: qryGetAMECData_480-135145_EP.xlsx

Data review summary.

SDG 480-135145-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1315-PC3-28D, 1315-PC6-28D, 1315-PC3FS1-28D, 1315-CC3-28D, 1315-PC3HLDM-28D and 1315-BLANK-28D.

Below are quality control elements that fell outside of acceptance criteria.

- Manganese was detected in the method blank (0.00132 J mg/L) and the blank 1315-BLANK-28D (0.00076 J mg/L) provided by Kemron. The manganese concentrations for all samples were < 5X the blank concentration and U qualified as ND at the RL.
- Dissolved organic carbon was detected in the laboratory blank (0.571 J mg/L). The dissolved organic carbon concentration for sample 1315-PC3FS1-28D was < 5x the blank concentration and U qualified as ND at the reported concentration.
- Sample 1315-PC3-28D was selected as the source for the MS/MSD. The recovery of alkalinity was below the lower control limit. The alkalinity result for sample 1315-PC3-28D was J-qualified due to the potential low bias.
- Alkalinity (1.9 mg/L) was detected in the blank 1315-BLANK-28D provided by Kemron. The alkalinity results for all samples were > 5x the blank concentration so no qualifications were necessary.

Elizabeth Penta
Environmental Chemist
Direct: +1 978 392 5366
Elizabeth.penta@woodplc.com www.woodplc.com



From: Nelson, Andrew K (Westford) [<mailto:andrew.nelson@woodplc.com>]
Sent: Monday, May 21, 2018 1:05 PM
To: King, Denise <denise.king@woodplc.com>; Penta, Elizabeth <elizabeth.penta@woodplc.com>
Cc: Johnson, Russell A <russell.johnson2@woodplc.com>
Subject: FW: TestAmerica EDD and report files from 480-135145-1 Bailly Treatability Study

Hi Denise/Liz, attached is the EDD to validate for this second NIPSCO EDD of the day.

Please note that it appears that Sample ID "1315-PC3HLDN-28D" should be "1315-PC3HLDM-28D" based on previous sampling rounds. I have made this update to the database and the attached file has this. You might want to alert the lab so they can make the updates on the lab reports.

Thanks,
Andrew

From: Jones, Rebecca [<mailto:rebecca.jones@testamericainc.com>]
Sent: Monday, May 21, 2018 12:00 PM
To: Andrew Nelson <andrew.nelson@woodplc.com>; Ms. Denise King <denise.king@woodplc.com>
Subject: TestAmerica EDD and report files from 480-135145-1 Bailly Treatability Study

Hello,

Attached please find the EDD and report files for job 480-135145-1; Bailly Treatability Study

Please feel free to contact me or your PM John Schove if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

REBECCA M JONES
Project Manager Assistant

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.691,2600
www.testamericainc.com

Reference: [368450]
Attachments: 2

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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Thursday, May 31, 2018 12:56 PM
To: Johnson, Russell A
Cc: Penta, Elizabeth
Subject: FW: TestAmerica report files from 480-135146-1 Bailly Treatability Study

Data review summary.

SDG 480-135146-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1312-PC3-56D, 1312-PC6-56D, 1312-PC3FS1-56D, 1312-CC3-56D, and 1312-PC3HLDM-56D.

Below are quality control elements that fell outside of acceptance criteria.

- Aluminum was detected in the laboratory SPLP blank (1.36 mg/L). The aluminum concentrations for all samples were < 5X the blank concentration and U qualified as ND at the RL. AL = 6.8
- Manganese was detected in the laboratory SPLP blank (0.00773 J mg/L). The manganese concentrations for all samples were ND and not impacted. No qualifications were necessary.
- Sodium was detected in the laboratory SPLP blank (2.06 mg/L). The sodium concentrations for all samples were < 5X the blank concentration and U qualified as ND at the RL. AL = 10.3
- Sample 1312-PC3-56D was selected as the source for the MS/MSD. The recovery of calcium was below the lower control limit. The native calcium result for sample 1312-PC3-56D was > 4X the spike concentration and data could not be reviewed. No qualifications were necessary.

Liz

Elizabeth Penta
Environmental Chemist
Direct: +1 978 392 5366
Elizabeth.penta@woodplc.com www.woodplc.com



From: Nelson, Andrew K (Westford) [<mailto:andrew.nelson@woodplc.com>]
Sent: Monday, May 21, 2018 12:11 PM
To: Johnson, Russell A <russell.johnson2@woodplc.com>; King, Denise <denise.king@woodplc.com>
Cc: Penta, Elizabeth <elizabeth.penta@woodplc.com>
Subject: RE: TestAmerica report files from 480-135146-1 Bailly Treatability Study

Denise/Liz, attached is this NIPSCO EDD to validate that came in late on Friday. I just saw that another EDD for NIPSCO arrived, so I'll do that one now and send along shortly.

Russ, I updated the sample ID you mentioned, so the database is accurate now.

Thanks,
Andrew

From: Johnson, Russell A [<mailto:russell.johnson2@woodplc.com>]
Sent: Friday, May 18, 2018 5:07 PM
To: King, Denise <denise.king@woodplc.com>
Cc: Penta, Elizabeth <elizabeth.penta@woodplc.com>; Andrew Nelson <andrew.nelson@woodplc.com>
Subject: FW: TestAmerica report files from 480-135146-1 Bailly Treatability Study

These results were saved here:

P:\old_WFD-FS1_Data\Projects\NiSource\BaillyGeneratingStation\Data\Laboratory Data\May_2018_Treatability_Study

I did notice one sample was ID'ed as 1312-PC3PS1-56D, same as the long-in form. The "P" should be an "F". I did not check other aspects of the report.

Russell A. Johnson, LEP
Program Manager
Direct: +1 (978) 392 5336
Mobile: +1 (508) 954 2518
www.woodplc.com



From: Jones, Rebecca [<mailto:rebecca.jones@testamericainc.com>]
Sent: Friday, May 18, 2018 4:25 PM
To: Johnson, Russell A <russell.johnson2@amecfw.com>
Subject: TestAmerica report files from 480-135146-1 Bailly Treatability Study

Hello,

Attached please find the report files for job 480-135146-1; Bailly Treatability Study

Please feel free to contact me or your PM John Schove if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

REBECCA M JONES
Project Manager Assistant

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.691.2600
www.testamericainc.com

Reference: [368211]
Attachments: 1

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Johnson, Russell A

From: King, Denise <denise.king@woodplc.com>
Sent: Wednesday, June 06, 2018 11:36 AM
To: Johnson, Russell A
Cc: Penta, Elizabeth
Subject: FW: TestAmerica EDD and report files from 480-135906-1 Bailly Treatability Study

Data review summary for SDG 480-135906-1.

SDG 480-135906-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1315-PC3-42D, 1315-PC6-42D, 1315-PC3FS1-42D, 1315-CC3-42D, 1315-PC3HLDM-42D and 1315-BLANK-42D.

Below are quality control elements that fell outside of acceptance criteria.

- Boron was detected in the method blank (0.00572 mg/L). The boron concentrations for all samples were >5X the blank concentration and not impacted. No qualifications were necessary. AL = 0.0286
- Iron was detected in the method blank (0.208 mg/L). Iron was ND in all samples and not impacted. No qualifications were necessary. AL = 1.04
- Manganese was detected in the method blank (0.00194 mg/L) and the laboratory SPLP blank (0.0019 mg/L). The manganese concentration for sample 1315-PC3HLDM-42D was ND and not impacted. The manganese concentrations for samples 1315-PC3-42D, 1315-PC6-42D, 1315-PC3FS1-42D, and 1315-CC3-42D were < 5X the blank concentration and U qualified as ND at the RL. AL = 0.0097
- Potassium was detected in the method blank (0.162 mg/L). The potassium concentrations for all samples were > 5X the blank concentration and not impacted. No qualifications were necessary. AL = 0.81
- Sulfate was detected in the method blank (0.358 mg/L). The sulfate concentrations for all samples were > 5X the blank concentration and not impacted. No qualifications were necessary. AL = 1.79
- Dissolved organic carbon (DOC) was detected in the method blank (0.501 mg/L). The DOC concentrations for samples 1315-CC3-42D, 1315-PC3-42D, 1315-PC3HLDM-42D and 1315-PC6-42D were > 5X the blank concentration and not impacted. The DOC concentration for sample 1315-PC3FS1-42D was < 5X the blank concentration and U qualified as ND at the RL. AL = 2.5
- Total dissolved solids (TDS) were detected in the laboratory SPLP blank (7.0 mg/L). The TDS concentrations for all samples were > 5X the blank concentration and not impacted. No qualifications were necessary. AL = 35
- The low level continuing calibration verification was above acceptance criteria for potassium, in the CCV associated with the method blank and LCS. The blank and LCS were within acceptance criteria and the samples were bracketed by acceptable CCVs and no qualifications were necessary.

Liz

Elizabeth Penta
Environmental Chemist
Direct: +1 978 392 5366
Elizabeth.penta@woodplc.com www.woodplc.com

wood.

From: Nelson, Andrew K (Westford) [<mailto:andrew.nelson@woodplc.com>]
Sent: Tuesday, June 05, 2018 11:52 AM
To: King, Denise <denise.king@woodplc.com>; Penta, Elizabeth <elizabeth.penta@woodplc.com>
Cc: Johnson, Russell A <russell.johnson2@woodplc.com>
Subject: FW: TestAmerica EDD and report files from 480-135906-1 Bailly Treatability Study

Hi Denise/Liz, attached is this NIPSCO EDD to validate that arrived today.

Thanks,
Andrew

From: Schove, John [<mailto:john.schove@testamericainc.com>]
Sent: Tuesday, June 5, 2018 11:15 AM
To: Andrew Nelson <andrew.nelson@woodplc.com>; Ms. Denise King <denise.king@woodplc.com>; Elizabeth Penta <elizabeth.penta@woodplc.com>; Johnson, Russell A <russell.johnson2@amecfw.com>
Subject: TestAmerica EDD and report files from 480-135906-1 Bailly Treatability Study

Hello,

Attached please find the EDD and report files for job 480-135906-1; Bailly Treatability Study

Please feel free to contact me if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

JOHN R SCHOVE
Project Manager

TestAmerica Buffalo
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 716.504.9838
www.testamericainc.com

Reference: [371101]
Attachments: 2

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Penta, Elizabeth

From: King, Denise <denise.king@woodplc.com>
Sent: Monday, August 20, 2018 5:50 PM
To: Johnson, Russell A; Nelson, Andrew K (Westford)
Cc: Penta, Elizabeth
Subject: FW: Bailly data review- SDGs 480-136297, 480-136900 and 480-136902
Attachments: qryGetAMECData_480-136900&136902&136297_EP1.xlsx

Better late than never.....see below.

Andrew- EDDs attached.

Denise King

Senior Environmental Chemist
Direct: +1 (978) 392-5339
Mobile: +1 (508) 789-1738
Denise.King@woodplc.com



From: Penta, Elizabeth [mailto:elizabeth.penta@woodplc.com]
Sent: Thursday, June 21, 2018 5:06 PM
To: King, Denise <denise.king@woodplc.com>
Subject: Bailly data review- SDGs 480-136297, 480-136900 and 480-136902

Hi Denise,

Data review summary for SDG 480-136297

SDG 480-136297-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1315-PC3-49D, 1315-PC6-49D, 1315-PC3FS1-49D, 1315-CC3-49D, 1315-PC3HLDM-49D and 1315-BLANK-49D.

Below are quality control elements that fell outside of acceptance criteria.

- Total dissolved solids was run outside of the method required holding time for all samples. All TDS results were UJ/J-qualified as estimated.
- Iron was detected in the blank (1315-Blank-49D) (0.021 mg/L) provided to TestAmerica from Kemron. Iron was ND in all samples and not impacted. No qualifications were necessary.
- Manganese was detected in the method blank (0.000950 mg/L). Manganese was ND in all samples and not impacted. No qualifications were necessary.
- Alkalinity was detected in the blank (1315-Blank-49D) (2.1 mg/L) provided to TestAmerica from Kemron. The alkalinity concentrations for all samples were > 5X (10.5 mg/L) the blank concentration and not impacted. No qualifications were necessary.
- Sulfate was detected in the method blank (0.879 mg/L). Sulfate was ND in sample 1315-BLANK-49D and not impacted. The sulfate concentrations for samples 1315-PC3-49D, 1315-PC3FS1-49D, and 1315-CC3-49D were > 5X (4.395 mg/L) the blank concentration and not impacted. No qualifications were necessary.

- Dissolved organic carbon (DOC) was detected in the method blank (0.709 mg/L). The DOC concentration for sample 1315-PC3-49D was < 5X (3.545 mg/L) the blank concentration and U qualified as ND at the reported concentrations.

Data review summary for SDG 480-136900

SDG 480-136900-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples- 1315-PC3-63D, 1315-PC6-63D, 1315-PC3FS1-63D, 1315-CC3-63D, 1315-PC3HLDM-63D and 1315-BLANK-63D.

Below are quality control elements that fell outside of acceptance criteria.

- Boron was detected in the method blank (0.00466 mg/L). The boron concentrations for all samples were >5X (0.0233 mg/L) the blank concentration and not impacted. No qualifications were necessary.
- Potassium was detected in the method blank (0.102 mg/L). The potassium concentrations for all samples were > 5X (0.51 mg/L) the blank concentration and not impacted. No qualifications were necessary.
- Sulfate was detected in the method blank (0.637 mg/L) associated with sample 1315-BLANK-63D. The sample is ND and not impacted. No qualifications are necessary.
- Sodium was detected in the method blank (0.370 mg/L). The sodium concentrations for samples 1315-PC3-63D and 1315-PC3HLDM-63D were > 5X (1.85 mg/L) the blank concentration and not impacted. The sodium concentrations for samples 1315-CC3-63D, 1315-PC3FS1-63D and 1315-PC6-63D were < 5X (1.85 mg/L) the blank concentration and U qualified as ND at the reported concentrations.
- Dissolved organic carbon (DOC) was detected in the method blank (0.578 mg/L). The DOC concentrations for samples 1315-CC3-63D, 1315-PC3-63D, 1315-PC3HLDM-63D, and 1315-PC6-63D were > 5X (2.89 mg/L) the blank concentration and not impacted. The DOC concentration for sample 1315-PC3FS1-63D was < 5X (2.89 mg/L) the blank concentration and U qualified as ND at the reported concentrations.
- Dissolved organic carbon (DOC) was detected in the method blank (0.482 mg/L) associated with sample 1315-BLANK-63D. The sample is ND and not impacted. No qualifications are necessary.
- Total dissolved solids (TDS) was detected in the method blank (4.0 mg/L) and the blank (1315-BLANK-63D) (41.0 mg/L) provided to TestAmerica from Kemron. The TDS concentrations for all samples were < 5X (205 mg/L) the blank concentration and U qualified as ND at the reported concentrations. AL = 205
- The continuing calibration verification associated with sample 1315-BLANK-63D was above acceptance criteria for sulfate. Sulfate was ND in the associated sample and not impacted by the imprecision. No qualifications were necessary.

Data review summary for SDG 480-136902

SDG 480-136902-1 was reviewed and it was determined that data is suitable for use and no data would be rejected. SDG includes samples 1312-PC3-91D, 1312-PC6-91D, 1312-PC3FS1-91D, 1312-CC3-91D, 1312-PC3HLDM-91D, 1312-PC3-91D-DUP, 1312-PC6-91D-DUP, 1312-PC3FS1-91D-DUP, 1312-CC3-91D-DUP, and 1312-PC3HLDM-91D-DUP.

Below are quality control elements that fell outside of acceptance criteria.

- Sodium was detected in the leachate blank (1.13 mg/L). The sodium results for samples 1312-CC3-91D, 1312-CC3-91D-DUP, 1312-PC3-91D, 1312-PC3-91D-DUP, 1312-PC3FS1-91D, 1312-PC3FS1-91D-DUP, 1312-PC3HLDM-91D, and 1312-PC3HLDM-91D-DUP were < 5X (5.65 mg/L) the blank concentration and U qualified as ND, at the reported concentrations. The sodium results for samples 1312-PC6-91D and 1312-PC6-91D-DUP were > 5X (5.65 mg/L) the blank concentration and were not impacted.

- Calcium recovered below acceptance criteria in the MS/MSD of sample 1312-PC3HLDM-91D (61%/58%). The native sample concentration was >4X the spike amount and data could not be evaluated. No qualification was necessary.

Liz

Elizabeth Penta

Environmental Chemist

Direct: +1 978 392 5366

Elizabeth.penta@woodplc.com www.woodplc.com



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wood.

Attachment C

Initial CCR Treatability Results

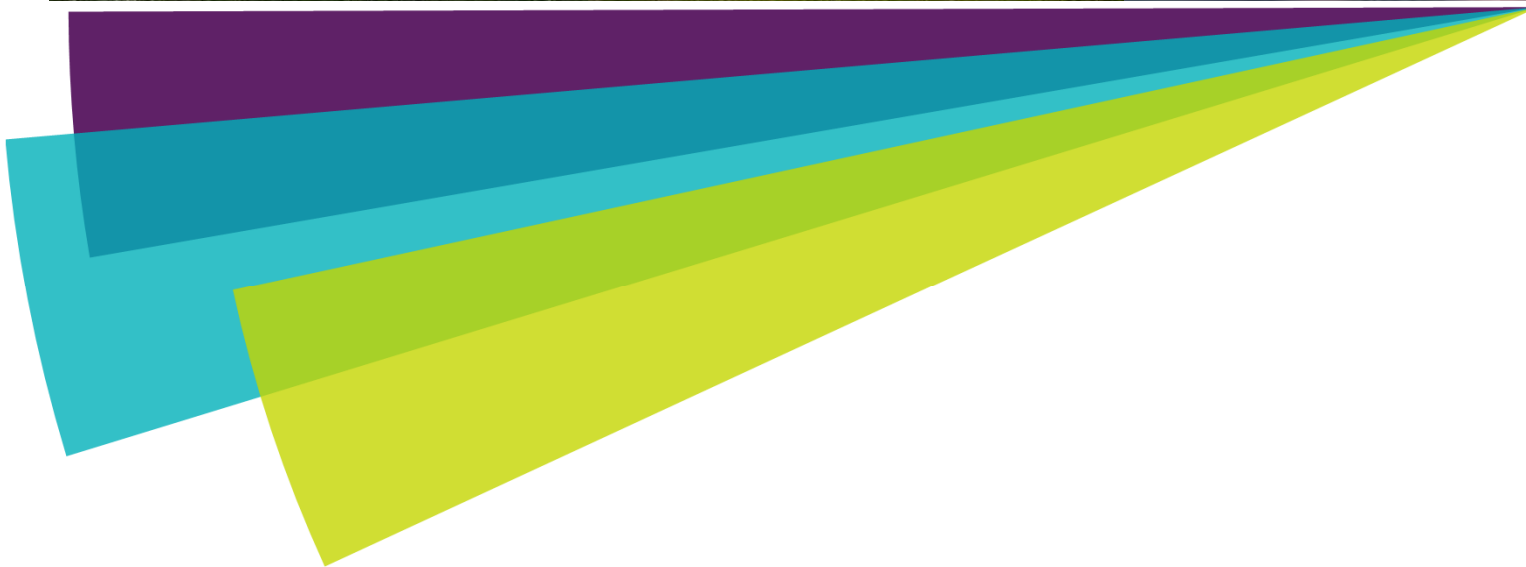
Initial CCR Treatability Results SWMU 15 - Bailly Generating Station



EPA Conference Call
February 2, 2018



Source: KEMRON Environmental Services, Inc.



Meeting Agenda

- ▶ Safety Moment
- ▶ Objectives
- ▶ Boron Plume/Groundwater Flow
- ▶ CCR Sample Locations
- ▶ Method 1316 Results
- ▶ Solid CCR Properties
- ▶ Recommendation





Safety Moment – Shovelling

- ▶ Stretch and warm up before you shovel.
- ▶ Pick the right tool appropriate for the snow conditions.
- ▶ Plan your approach to minimize distance needed to move snow.
- ▶ Lift with you knees, not your back.
- ▶ Turn your whole body, don't twist.
- ▶ Shovel frequently.
- ▶ Take regular breaks, stay hydrated, and pace yourself.
- ▶ Share the task.
- ▶ If it hurts, stop.

A Little Elbow Grease

Sometimes a shovel is the only tool that will do, but to deal with a variety of snow circumstances, you'll need more than one. Look for:



PROPER TECHNIQUE FOR SHOVELLING SNOW



Objectives

Overall Goal of Partial Excavation/ISS

- ▶ Reduce the mass flux of inorganics, particularly boron, from CCR below the water table at SWMU 15

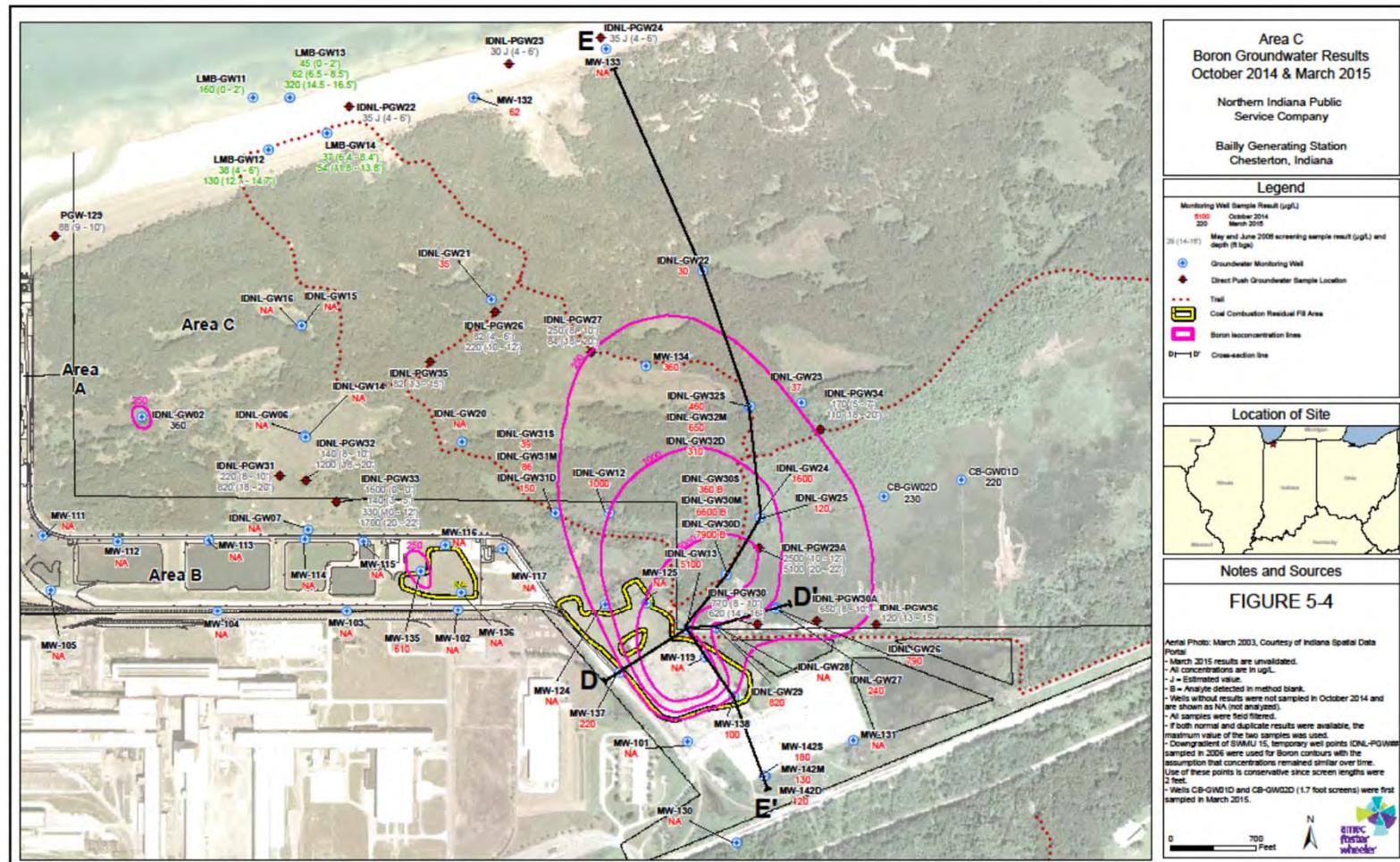
Initial Testing Goal – Choose CCR sample from one area of SWMU 15 for additional testing, based on*

- ▶ Highest concentration of boron from Method 1316 testing
- ▶ Reasonably consistent compositional analysis
- ▶ Reasonably consistent physical properties

* Taken from Pages 3-1 to 3-2 of the Treatability Study Work Plan, December 21, 2017.



Boron Plume



K:\Source\BailyGenerating\GIS\BMD\Division 2 - Area C Boron Groundwater Results_Oct2014.mxd June 08, 2015 DWN: erly garber CH2D: A0N

Groundwater Flow

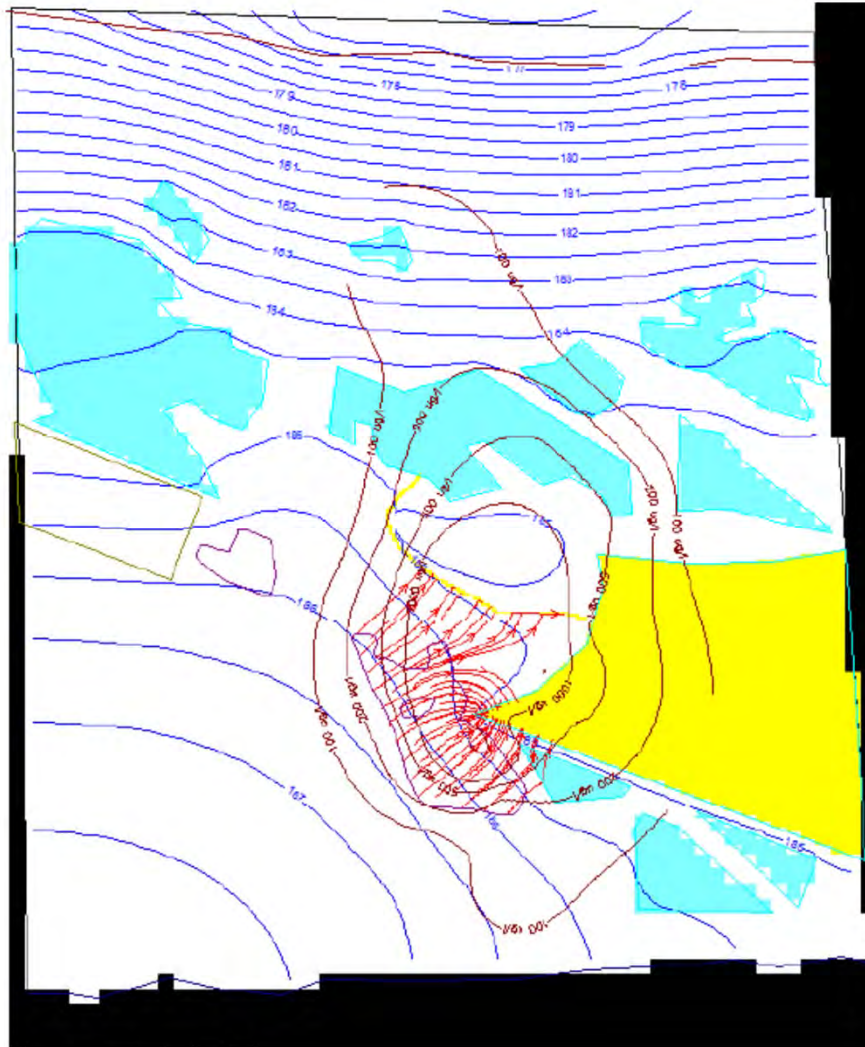
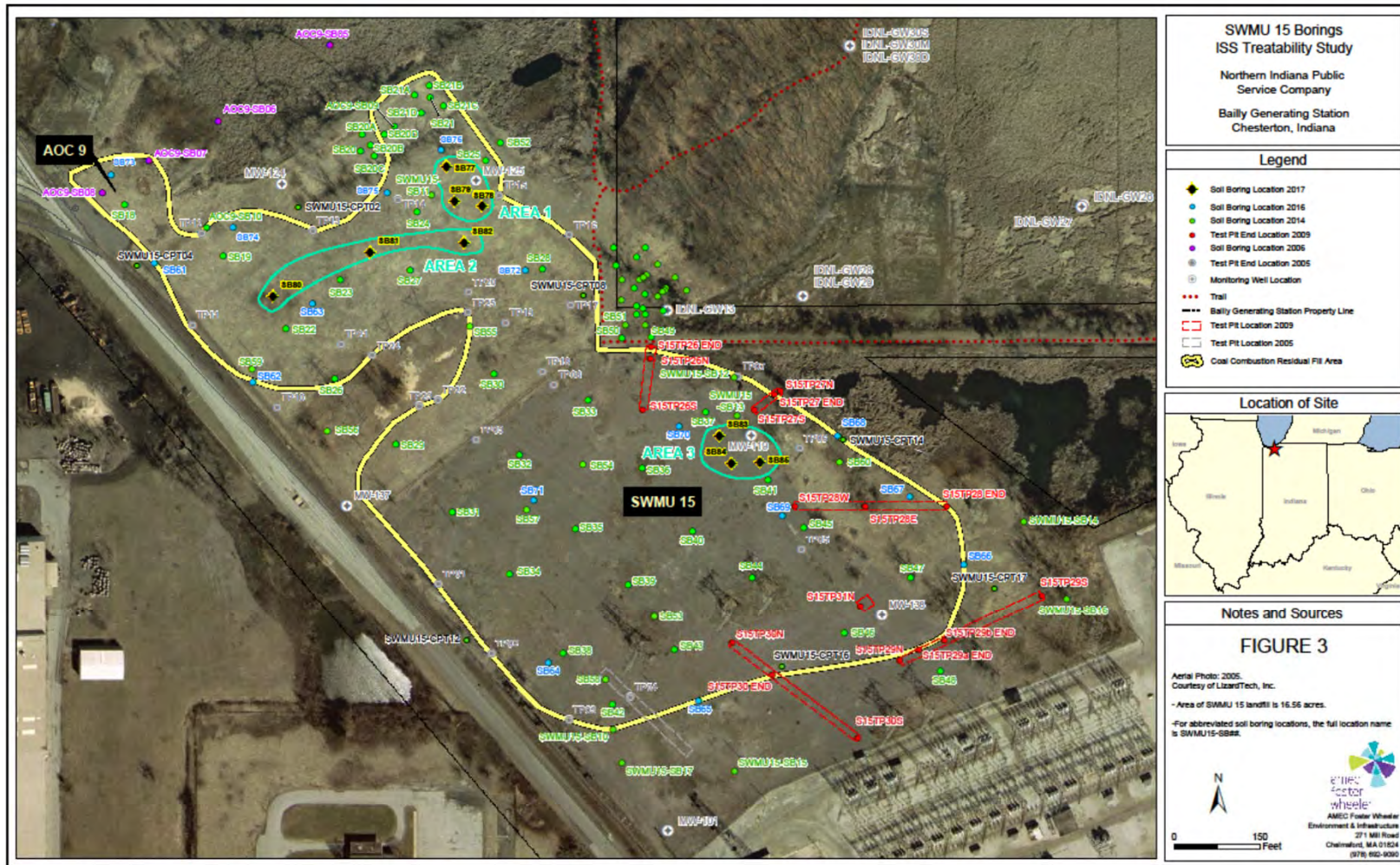


Figure 2.9 – Forward Particle Tracks from SWMU 15 w/ 2-Year Travel Time Markers

Source: Appendix J, Revised Draft Area C Corrective Measures Study
March 18, 2016

CCR Sample Locations



CCR Leachate Characteristics Method 1316 Results

Method 1316 Results - Boron

Analyte List for Aqueous Samples

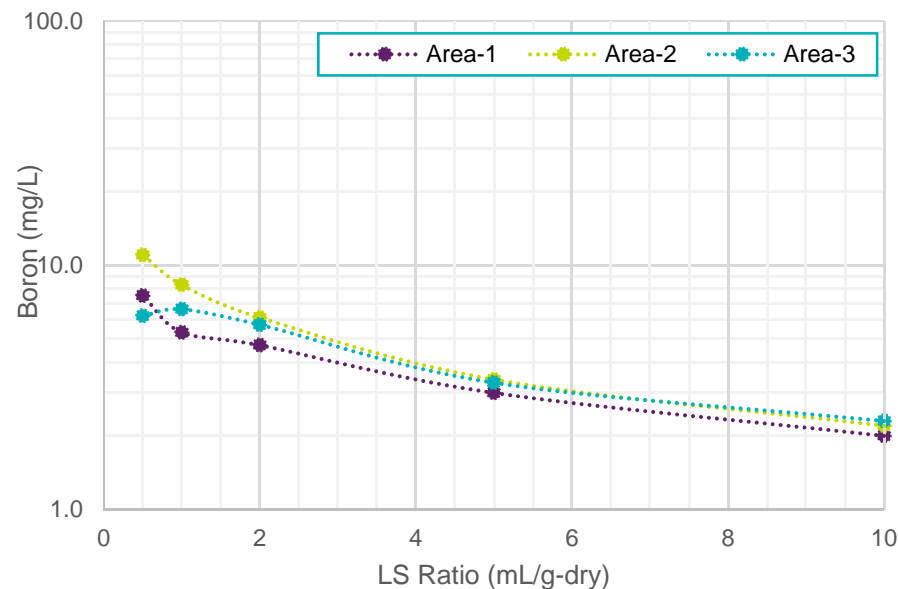
- ▶ Contaminants of Concern - Al, As, B, Mn, Mo, and Se
- ▶ General Chemistry - Ca, Fe, Mg, K, Na, chloride, sulfate, organic carbon and TDS
- ▶ KEMRON – pH, specific conductance, ORP, DO and turbidity

Boron at L/S of 10:

- Area 1 – 2.0 mg/L
- Area 2 – 2.2 mg/L
- Area 3 – 2.3 mg/L

pH at L/S of 10:

- Area 1 – 9.37
- Area 2 – 9.43
- Area 3 – 10.43





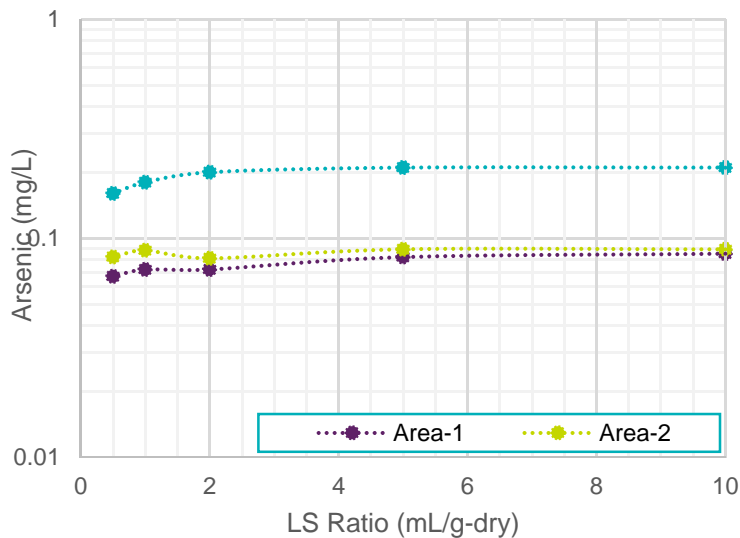
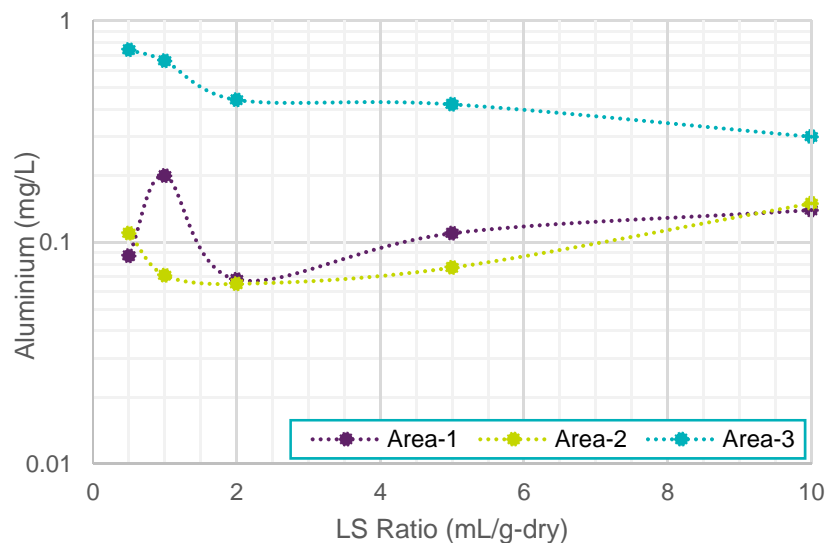
Method 1316 Results – Aluminum & Arsenic

Aluminum at L/S of 10:

- Area 1 – 0.14 mg/L
- Area 2 – 0.15 mg/L
- Area 3 – 0.3 mg/L

pH at L/S of 10:

- Area 1 – 9.37
- Area 2 – 9.43
- Area 3 – 10.43



Arsenic at L/S of 10:

- Area 1 – 0.085 mg/L
- Area 2 – 0.089 mg/L
- Area 3 – 0.21 mg/L

Method 1316 Results – Manganese & Molybdenum

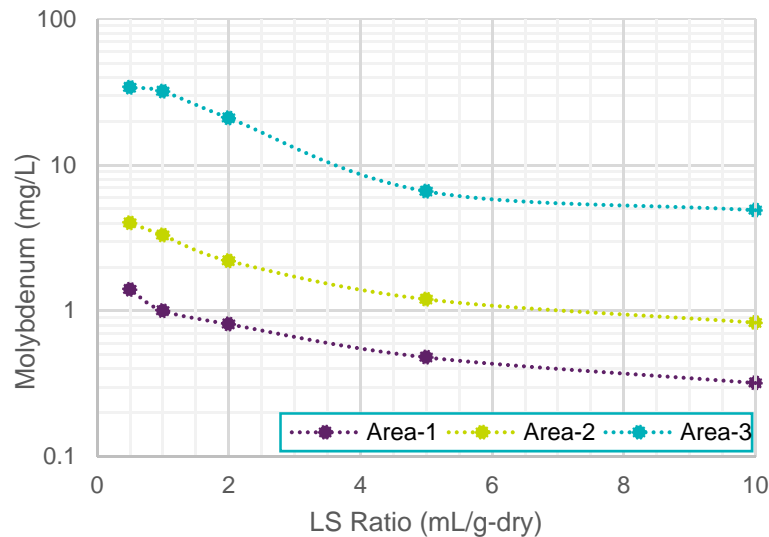
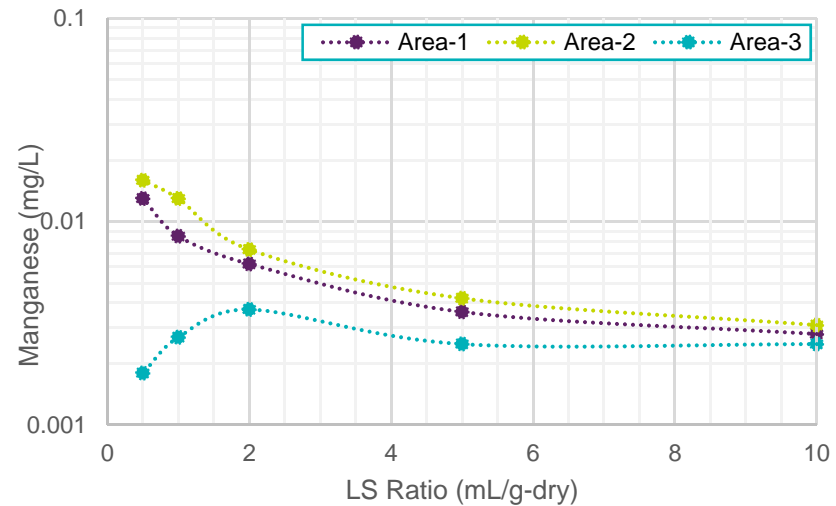


Manganese at L/S of 10:

- Area 1 – 0.0028 mg/L
- Area 2 – 0.0031 mg/L
- Area 3 – 0.0025 mg/L

pH at L/S of 10:

- Area 1 – 9.37
- Area 2 – 9.43
- Area 3 – 10.43



Molybdenum at L/S of 10:

- Area 1 – 0.32 mg/L
- Area 2 – 0.83 mg/L
- Area 3 – 4.2 mg/L



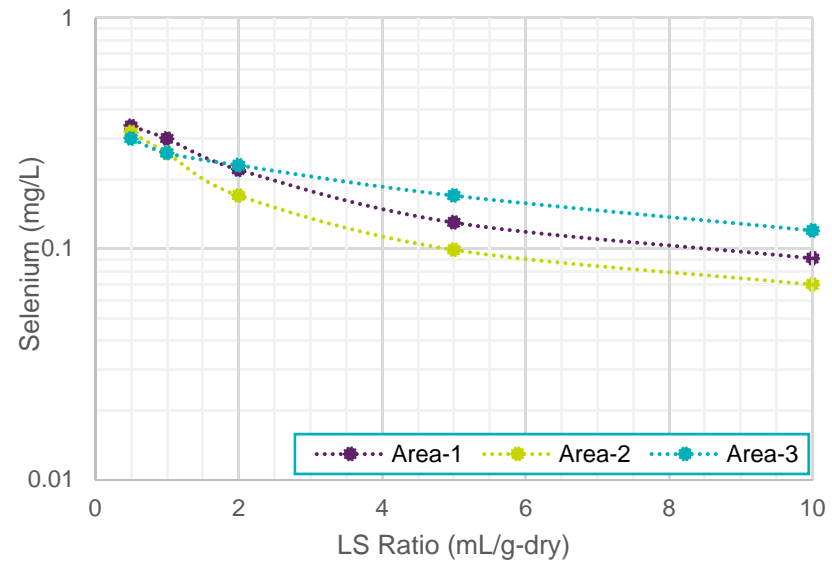
Method 1316 Results – Selenium

Selenium at L/S of 10:

- Area 1 – 0.091 mg/L
- Area 2 – 0.070 mg/L
- Area 3 – 0.120 mg/L

pH at L/S of 10:

- Area 1 – 9.37
- Area 2 – 9.43
- Area 3 – 10.43



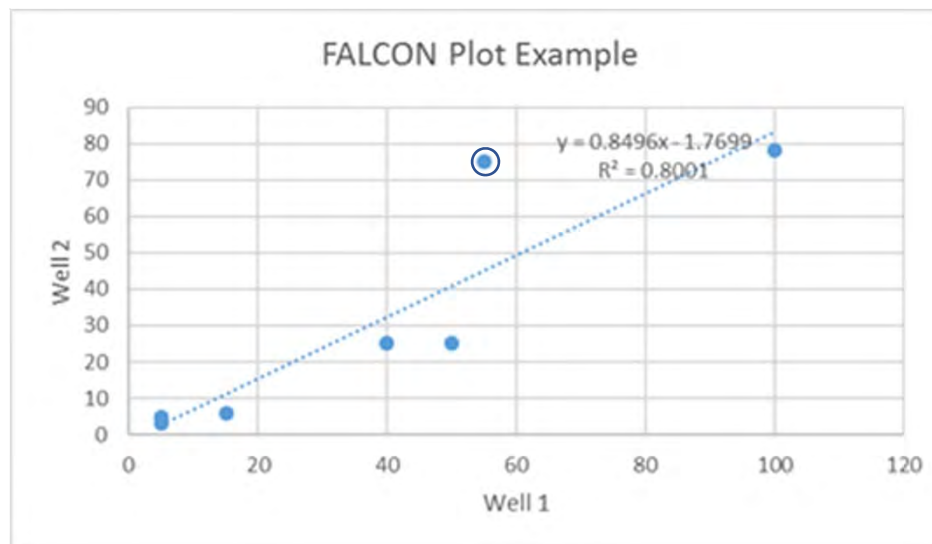
Method 1316 Results FALCON Plots



FALCON Plots – Example

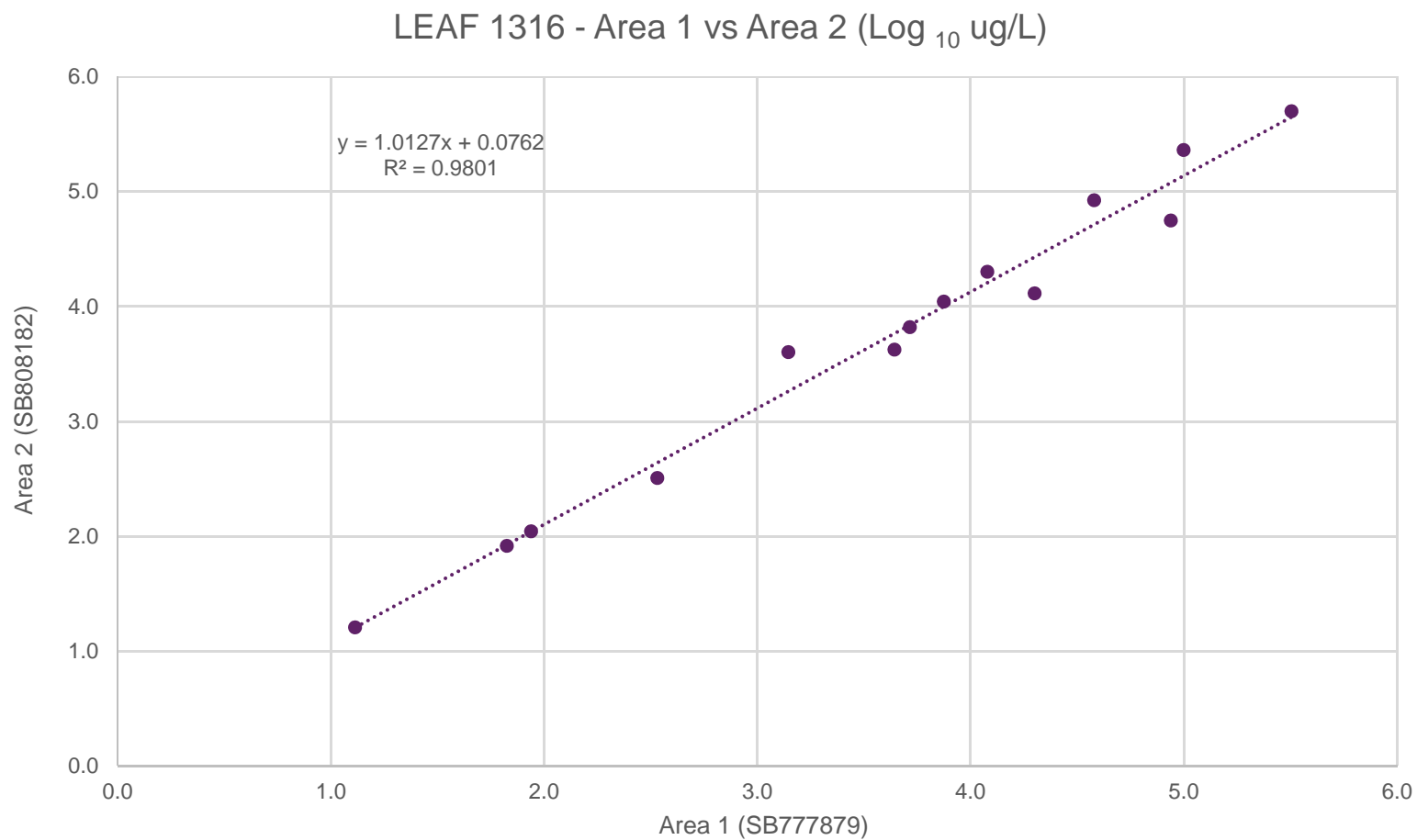
	Well 1	Well 2
calcium	50	25
magnesium	15	6
sodium	40	25
potassium	5	3
alkalinity	100	78
chloride	55	75
sulfate	5	5

(concentrations in mg/L)

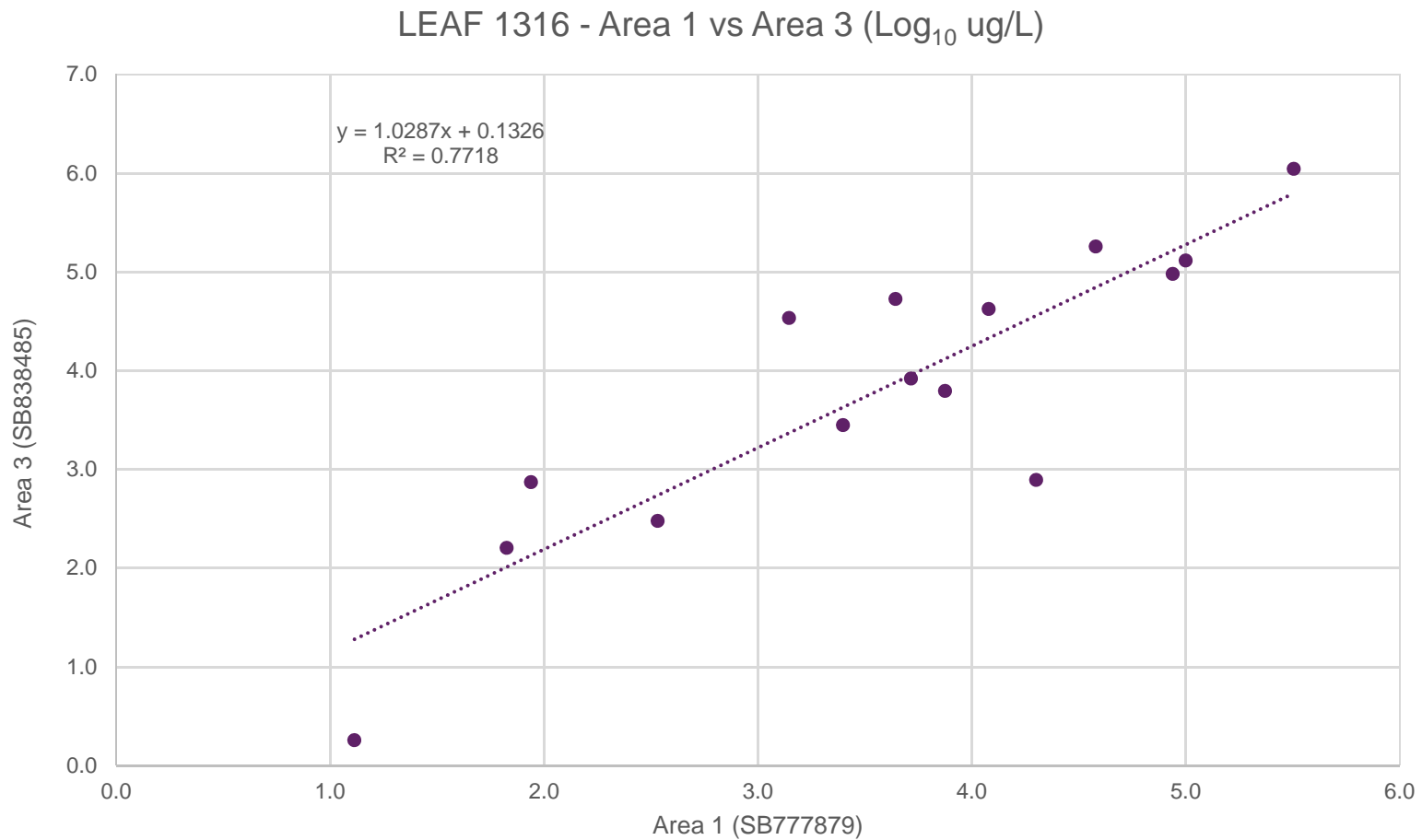


Plumb, Russell H. Jr. Fingerprint Analysis of Contaminant Data:
A Forensic Tool for Evaluating Environmental Contamination
EPA/600/5-04/054, May 2004.

Method 1316 FALCON Plots – Area 1 vs 2

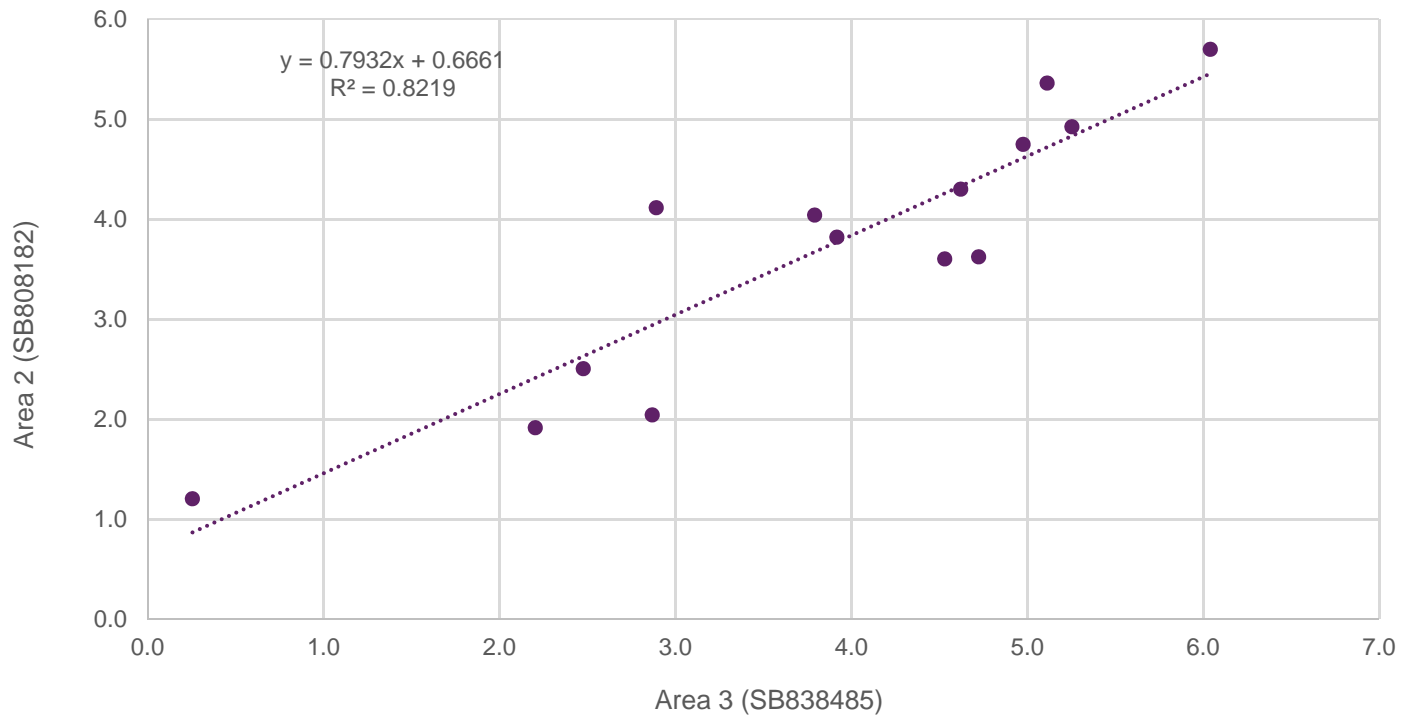


Method 1316 FALCON Plots – Area 1 vs 3



Method 1316 FALCON Plots – Area 3 vs 2

LEAF 1316 - Area 3 vs Area 2 (Log₁₀ ug/L)

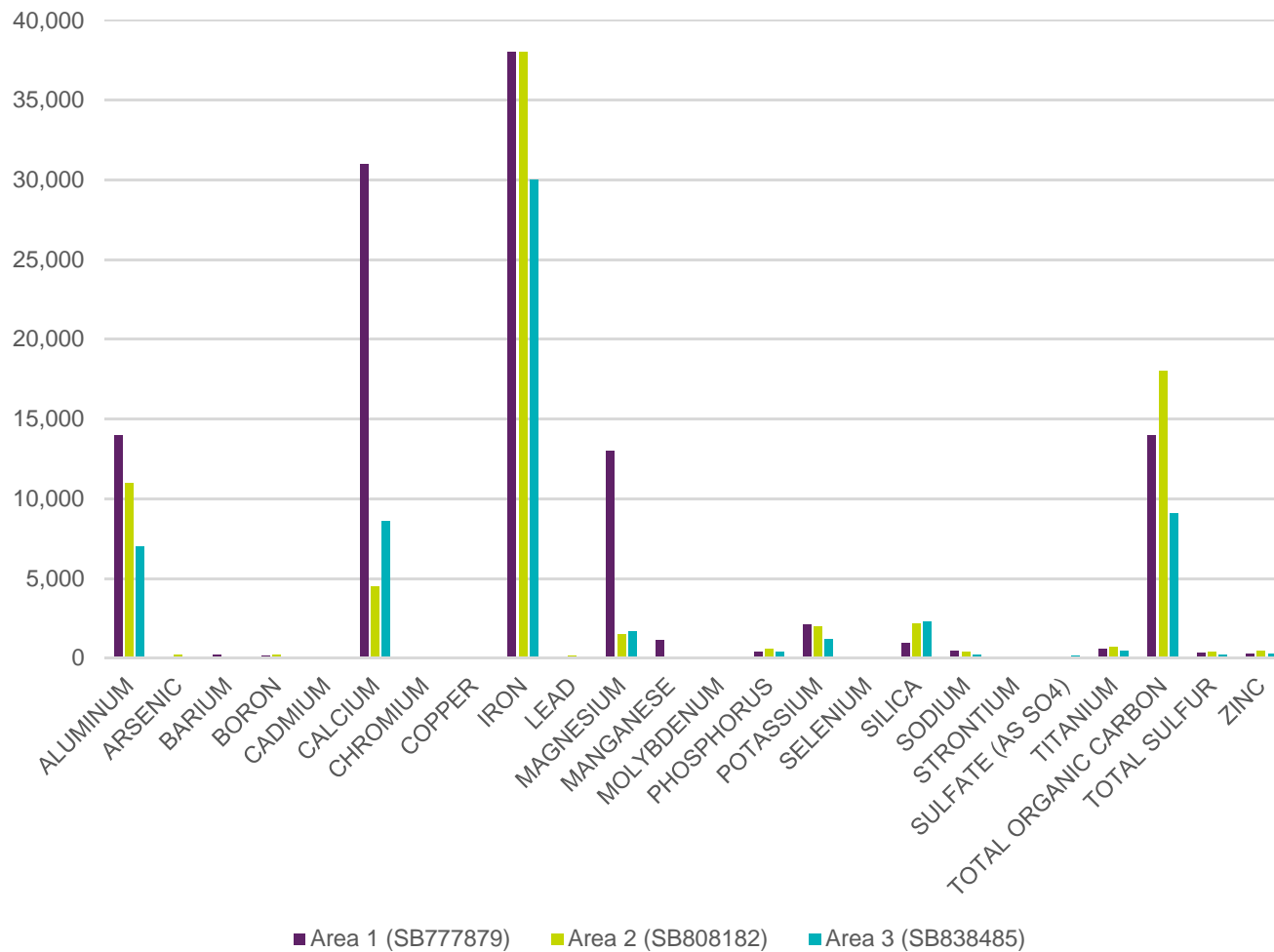


CCR Compositional Analysis



Solid CCR Bar Chart

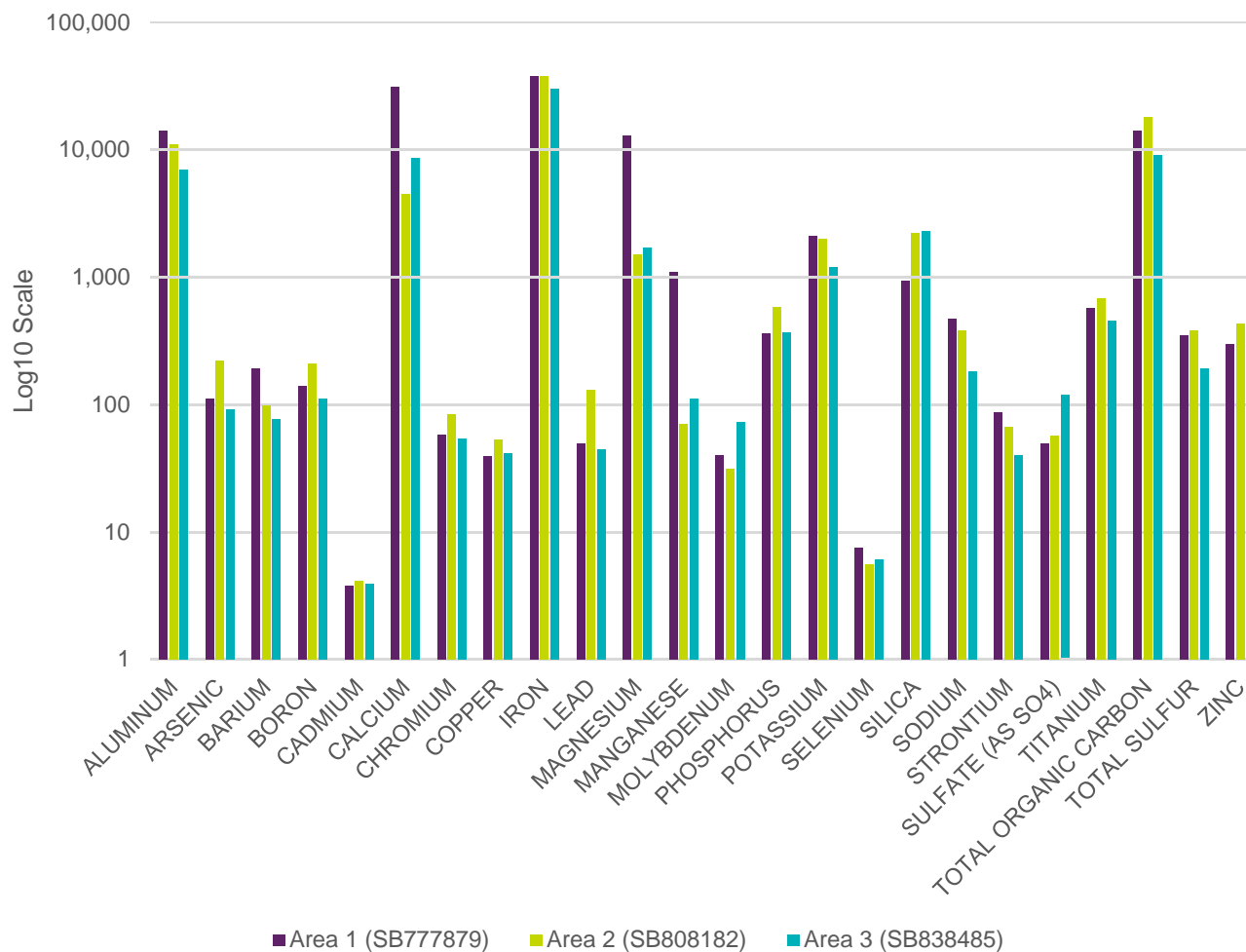
Figure 1. CCR Composition (mg/kg)





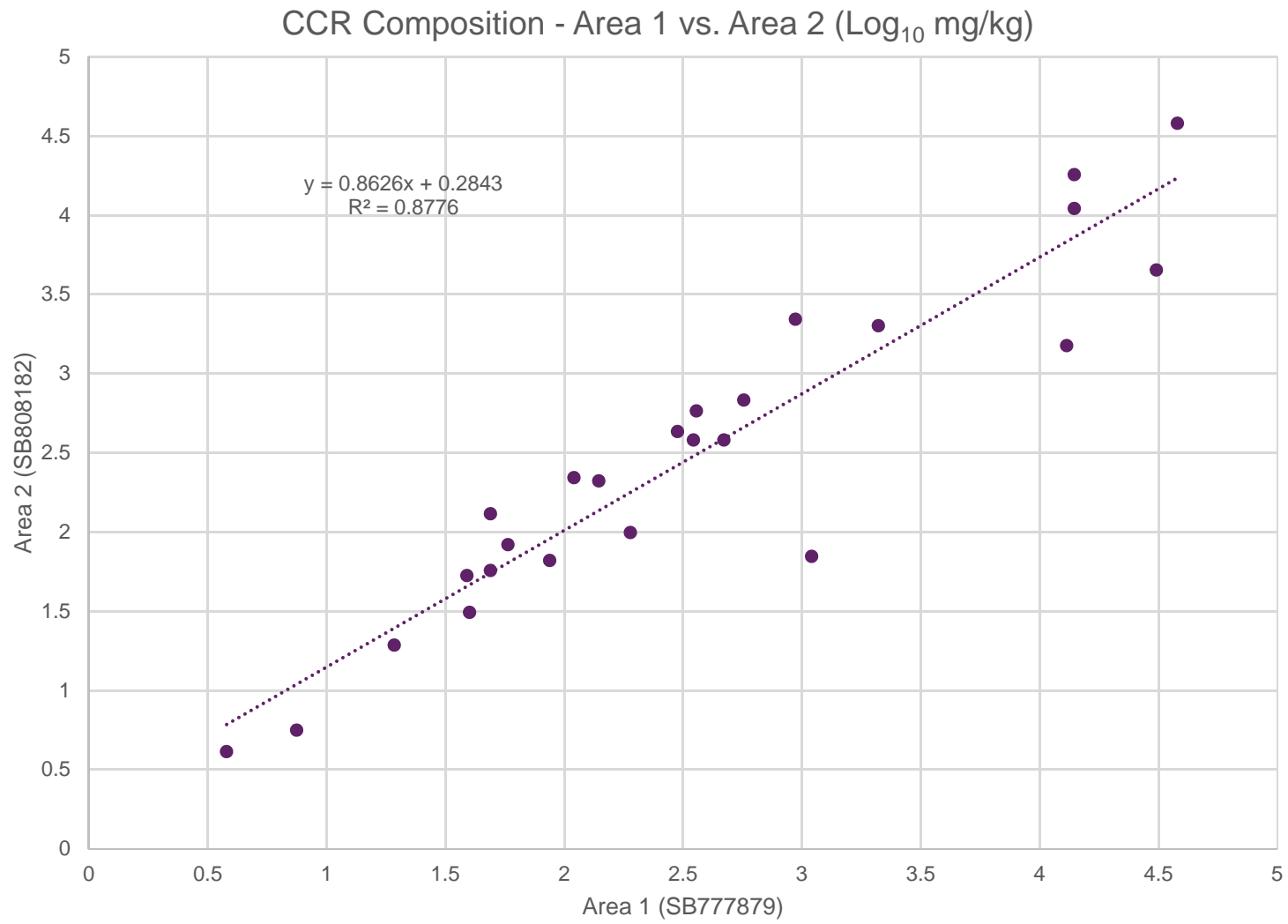
Solid CCR Bar Chart (Log₁₀ Scale)

Figure 2. CCR Composition (mg/kg)





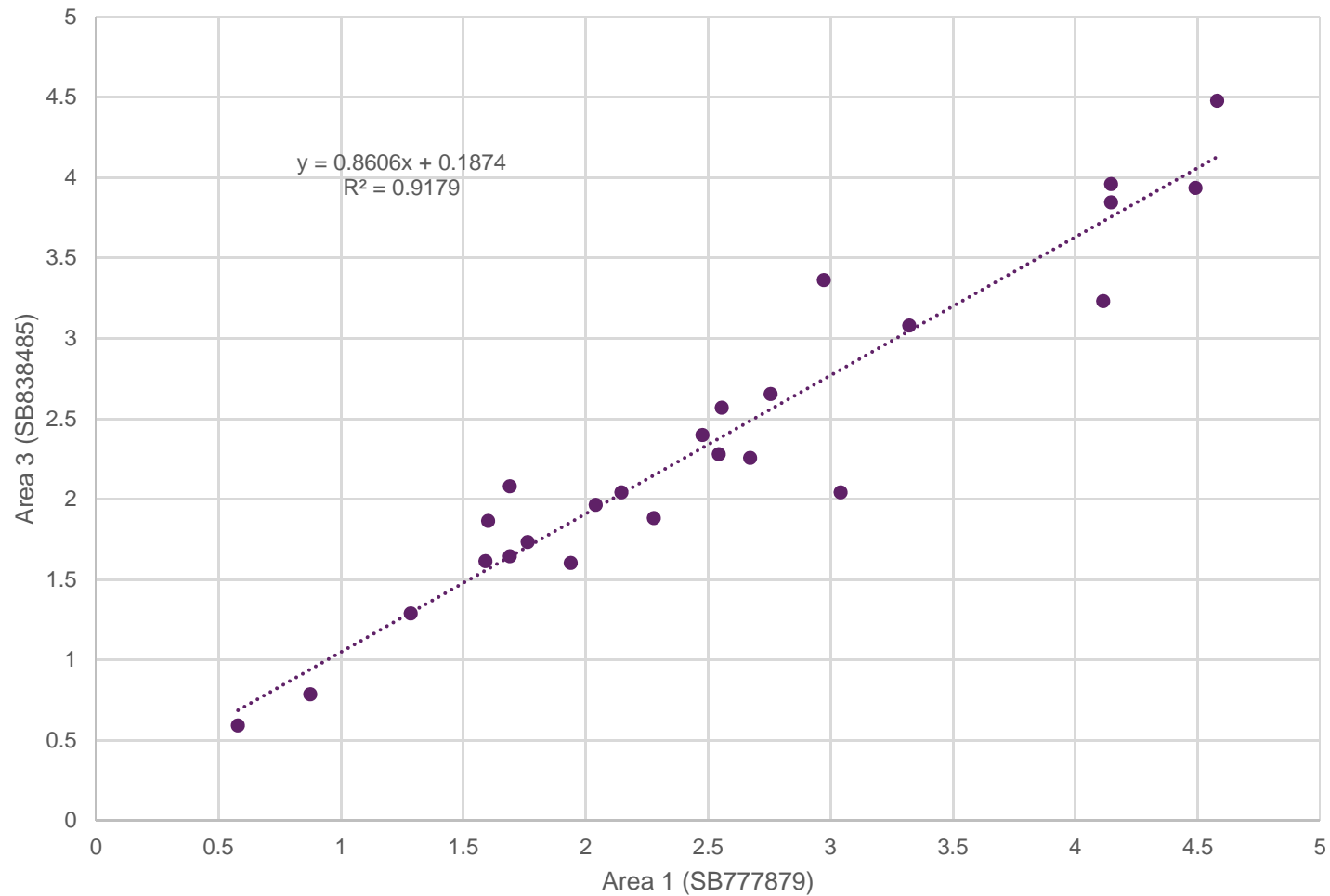
Solid CCR FALCON Plot – Area 1 vs 2





Solid CCR FALCON Plot – Area 1 vs 3

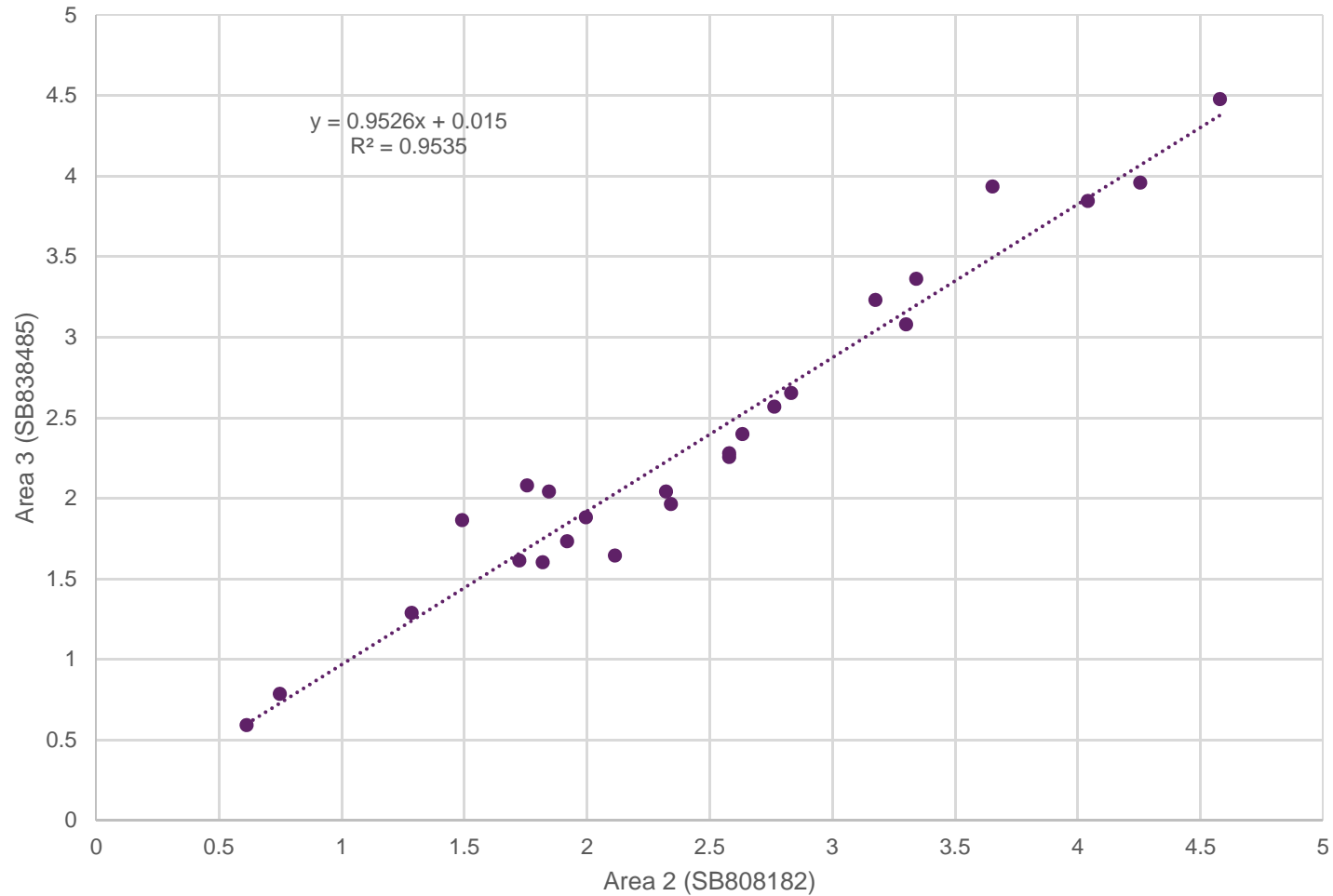
CCR Composition - Area 2 vs. Area 3 (Log₁₀ mg/kg)





Solid CCR FALCON Plot – Area 2 vs 3

CCR Composition - Area 2 vs. Area 3 (Log₁₀ mg/kg)

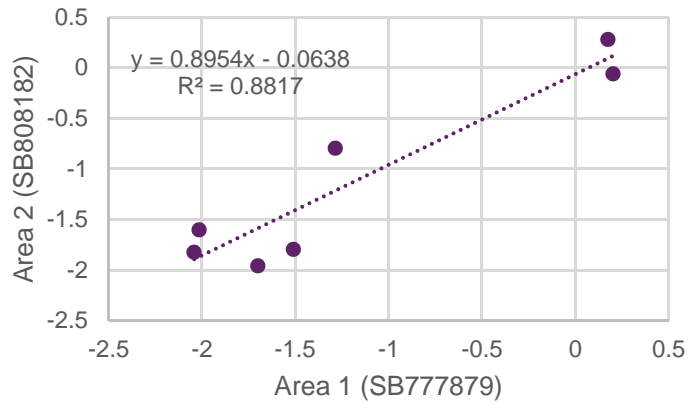


CCR TCLP Testing

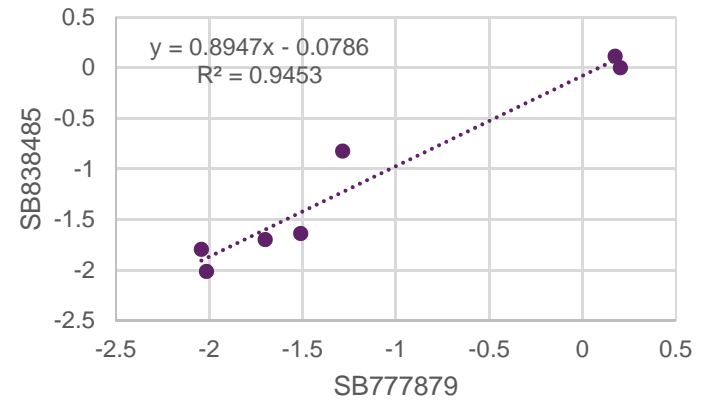
CCR TCLP RCRA 8 + Boron FALCON Plots



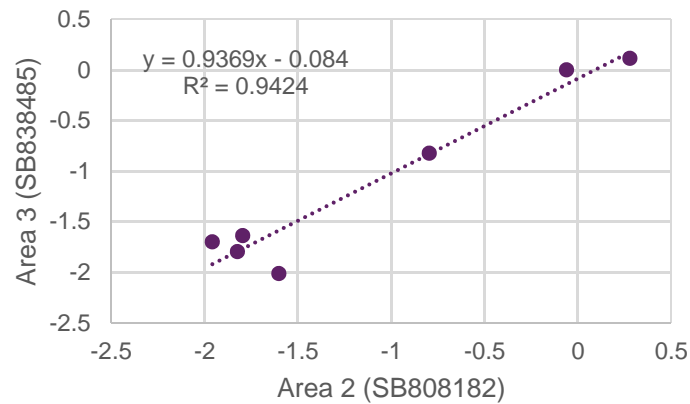
TCLP RCRA 8 + Boron - Area 1 vs Area 2
(Log₁₀ mg/L)



TCLP RCRA 8 + Boron - Area 1 vs Area 3
(Log₁₀ mg/L)



TCLP RCRA 8 + Boron - Area 2 vs Area 3
(Log₁₀ mg/L)



FALCON Plot Summary

FALCON Summary Scores (r ²)			
Plots	1316 final mix (log ₁₀ ug/L)	Solid CCR (log ₁₀ mg/kg)	Solid CCR TCLP (log ₁₀ mg/L)
Area 1 vs Area 2	0.9801	0.8776	0.8817
Area 1 vs Area 3	0.7718	0.9179	0.9453
Area 2 vs Area 3	0.8219	0.9535	0.9424

CCR Physical Properties

Untreated Material Physical Properties Testing

Testing Parameter	Test Method	Unit	Untreated Material		
			Area # 1	Area # 2	Area # 3
Particle Size Distribution	ASTM D422				
Gravel		%	0.5	0.0	0.0
Sand		%	15.9	13.2	45.4
Silt		%	72.5	75.1	44.9
Clay		%	11.1	11.7	9.7
Sample Description	USCS ASTM D2487		Black silt with sand	Black silt	Black sandy silt
Sample Classification	USCS D2487		ML	ML	ML
Atterberg Limits	ASTM D4318				
Plastic Limit			19	18	NP*
Liquid Limit			20	19	NP*
Plasticity Index			1	1	NP*
Moisture Content	ASTM D2216				
Average ASTM Moisture Content		%	32.04	30.49	26.86
Average Percent Solids		%	75.74	76.63	78.83
Loss on Ignition	ASTM D2974				
ASTM Moisture Content		%	31.97	30.06	26.26
Average Loss on Ignition @ 440°C		%	2.53	1.73	2.34
Unit Weight	ASTM D7263	pcf	120.1	120.1	126.0
Solid Specific Gravity	ASTM D 854		2.66	2.70	2.79

Notes:

Sample color determined by the Munsell Soil Color Charts

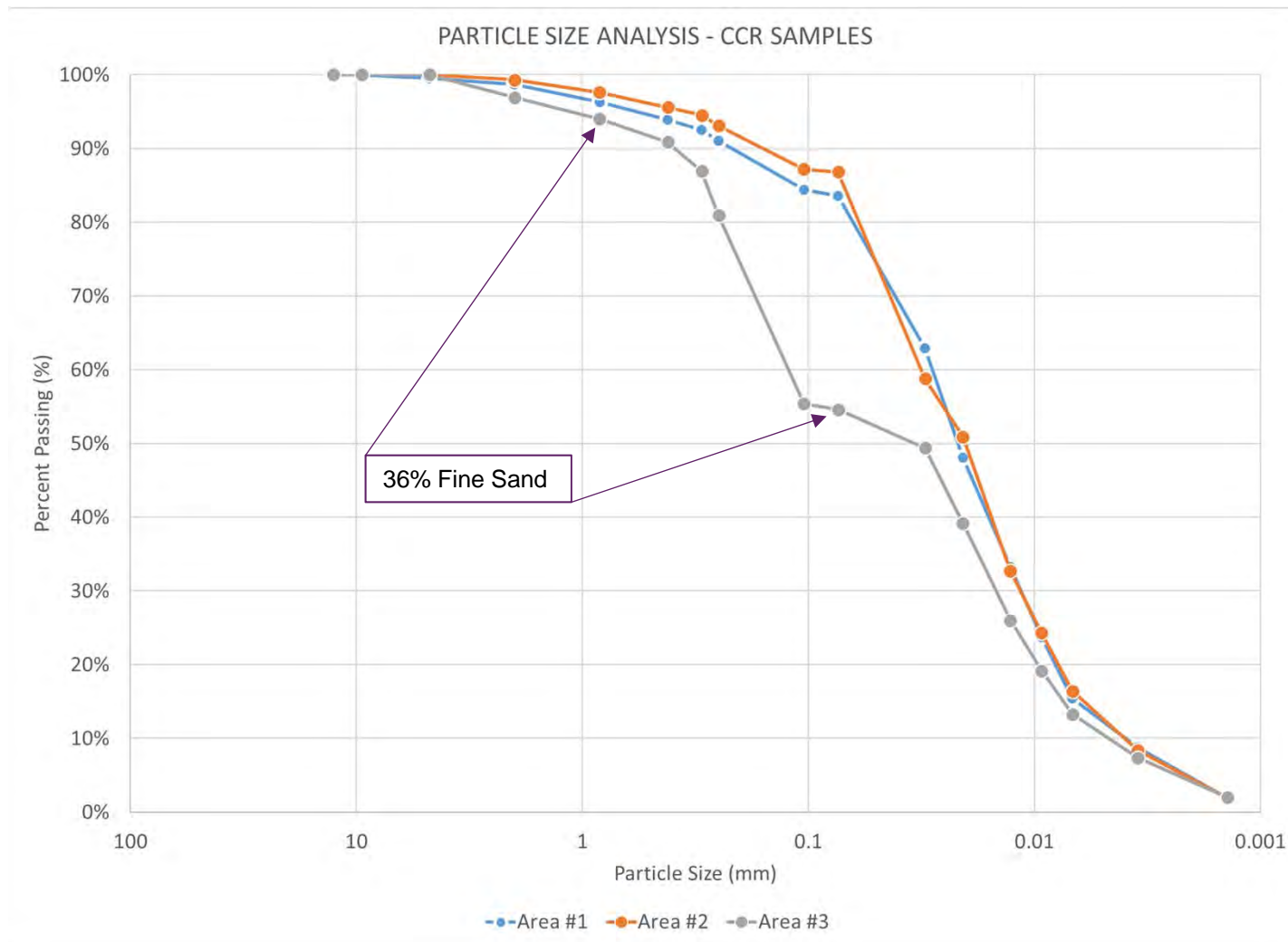
%= Percent

pcf = pounds per cubic foot

* = During Atterberg Limit testing, it was observed that the liquid limit for Area #3 was dryer than the plastic limit, resulting in a non-plastic designation per ASTM D4318



Compare Grain-Size Curves



Recommendation for Additional Testing

Area 3 CCR

- ▶ Highest B concentration in MW-119 well water.
- ▶ Method 1316 - highest B concentration, but similar to Area 1 and 2 samples (i.e., representative of three areas sampled).
- ▶ Method 1316 - highest Al, As, and Mo concentration; Mn similar to Area 1 and 2 samples.
- ▶ FALCON plots - 1316/TCLP are similar in all three samples.
- ▶ FALCON plots - CCR composition is similar in all three samples.
- ▶ Similar physical properties to Areas 1 and 2.
- ▶ Fine sand content higher than Areas 1 and 2, but not a significant consideration.



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Attachment D

Final ISS Treatability Results





Final ISS Treatability Results
SWMU15 – Bailly Generating Station

EPA Conference Call
July 25, 2018

woodplc.com



Goal of Partial Excavation/ISS

Reduce Mass Flux of Inorganics from SWMU 15

Primary Inorganic – Boron

- Most mobile
- Plume extends furthest into IDNL
- Highest concentrations in IDNL

Secondary Inorganics – Al, As, Mn, Se

- Less mobile, pH/redox dependent
- Plumes do not extend far into IDNL



ISS Treatability Study Goals

Initial Testing Goal – Choose CCR sample from one area of SWMU 15 for additional testing, based on*

- Highest concentration of boron from Method 1316 testing
- Reasonably consistent compositional analysis
- Reasonably consistent physical properties

Selected CCR from Area 3, near well MW-119

May 2018 – Reviewed preliminary results

* Taken from Pages 3-1 to 3-2 of the Treatability Study Work Plan, December 21, 2017.



Goals Today

- Review Monolith Data
 - Physical Properties
 - Leachability
 - Method 1315: 2-Hour* and Days 1, 2, 7, 14, 24, 42, 49, and 63 (Primary)
 - Simulates solidified mass under the water table
 - Method 1312: Curing Days 14, 28, 56 and 91 (Secondary)
 - Simulates excessive cracking of solidified mass
- Recommend a Formulation

* Green are results reviewed in May 2018



Formulations

Formulation	PC3	PC6	PC3FS1	CC3	PC3HLDM
Portland Cement (3%)	✓		✓		✓
Portland Cement (6%)		✓			
Ferrous Sulfate (1%)			✓		
Calciment (3%)				✓	
Hydrated Lime (1.5%)					✓
Ag-Dolomite (1.5%)					✓



Formulations and Test Methods

ISS Mix Design	Method 1312	Method 1315	UCS (ASTM D4832)		Hydraulic Conductivity (ASTM D5084)		Freeze/Thaw (ASTM D4842)	Wetting/Drying (ASTM 4843)	Volumetric Expansion	Moisture Content (ASTM D2216)	Bulk Density (ASTM D7263)	Dry Density
			28 d	56 d	28 d	59 d						
PC3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PC6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PC3FS1	✓	✓	NT	✓*	NT	✓	NT	NT	✓	✓	✓	✓
CC3	✓	✓	NT	✓*	NT	✓	NT	NT	✓	✓	✓	✓
PC3HLDM	✓	✓	NT	✓*	NT	✓	NT	NT	✓	✓	✓	✓
Notes:												
PC - Portland Cement; FS - Ferrous Sulfate; CC - Calciment; HL - Hydrated Lime; DM - Dolomite												
UCS - Unconfined Compressive Strength												
d - days												
✓* - Day 59												
NT - Not tested due to insufficient unconsolidated ash												
Discussed with EPA in May 2018												
Proposed for testing based on May 2018 discussion												



ISS Performance Criteria – Physical Properties

- Hydraulic Conductivity (Primary)
 - $< 1 \times 10^{-7}$ cm/sec
- Volumetric Expansion
 - $< 25\%$; minimize due to:
 - overhead lines
 - land surface contouring
- Unconfined Compressive Strength
 - 40 to 80 psi
- Freeze/Thaw and Wet/Dry
 - $< 15\%$ mass loss; note:
 - solidified mass will be below the water table and soil cover material, with minimal to no freeze/thaw or wet/dry cycles

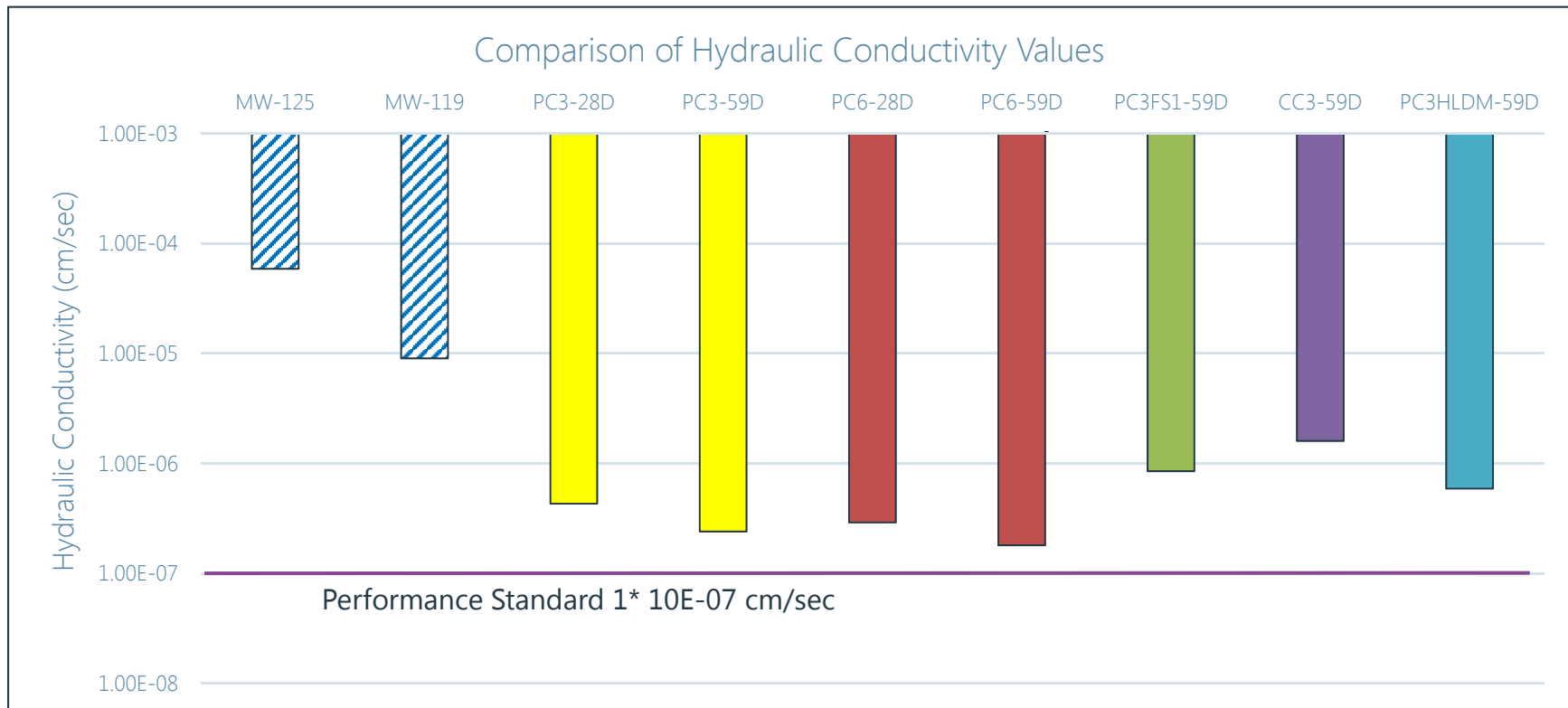


Physical Properties

Client Sample ID	Reagent Type	Reagent Addition % by Wet Soil Weight	Cure Day	Volumetric Expansion (%)	UCS (lb/in ²)	K (cm/sec)	Wet/Dry Durability (Pass/Fail)	Freeze/Thaw Durability (Pass/Fail)
PHYS-PC3-28D	Type I/II Portland Cement	3.0	28	12.49	69.0	4.3 x 10 ⁻⁷	Pass	Pass
PHYS-PC3-56D			56		107.2			
PHYS-PC3-59D			59	11.80		2.4 x 10 ⁻⁷		
PHYS-PC6-28D	Type I/II Portland Cement	6.0	28	20.83	119.0	2.9 x 10 ⁻⁷	Pass	Pass
PHYS-PC6-56D			56		229.5			
PHYS-PC6-59D			59	21.45		1.8 x 10 ⁻⁷		
PHYS-PC3FS1-56D	Type I/II Portland Cement/Ferrous Sulfate	3.0/1.0	59	9.93	61.3	8.5 x 10 ⁻⁷		
PHYS-CC3-56D	Hi-Cal Calciment	3.0	59	9.25	11.7	1.6 x 10 ⁻⁶		
PHYS-PC3HLDM-56D	Type I/II PC/High Cal Hydrated Lime/Ag-Dolomite	3.0/1.5/1.5	59	17.89	83.6	5.9 x 10 ⁻⁷		
		Performance Standard:		<25%	40-80	1.0 x 10 ⁻⁷	<15% mass loss	<15% mass loss
Notes:								
% = Percent								
K = Hydraulic Conductivity, centimeters per second (cm/sec)								
UCS - Unconfined Compressive Strength, pounds per square inch (lb/in ²)								



Hydraulic Conductivity Results



ISS Performance Criteria – Mass Flux

PRIMARY

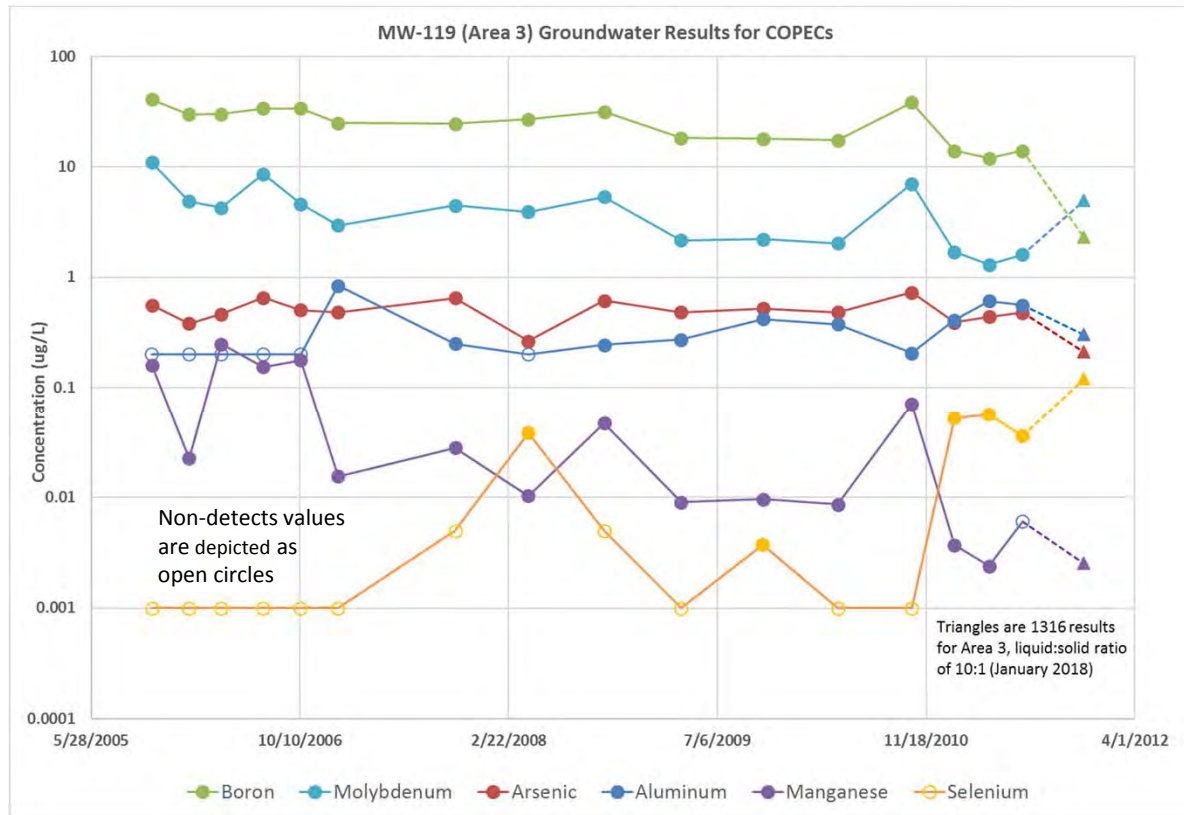
- Hydraulic Conductivity
 - 1×10^{-7} cm/sec

SECONDARY

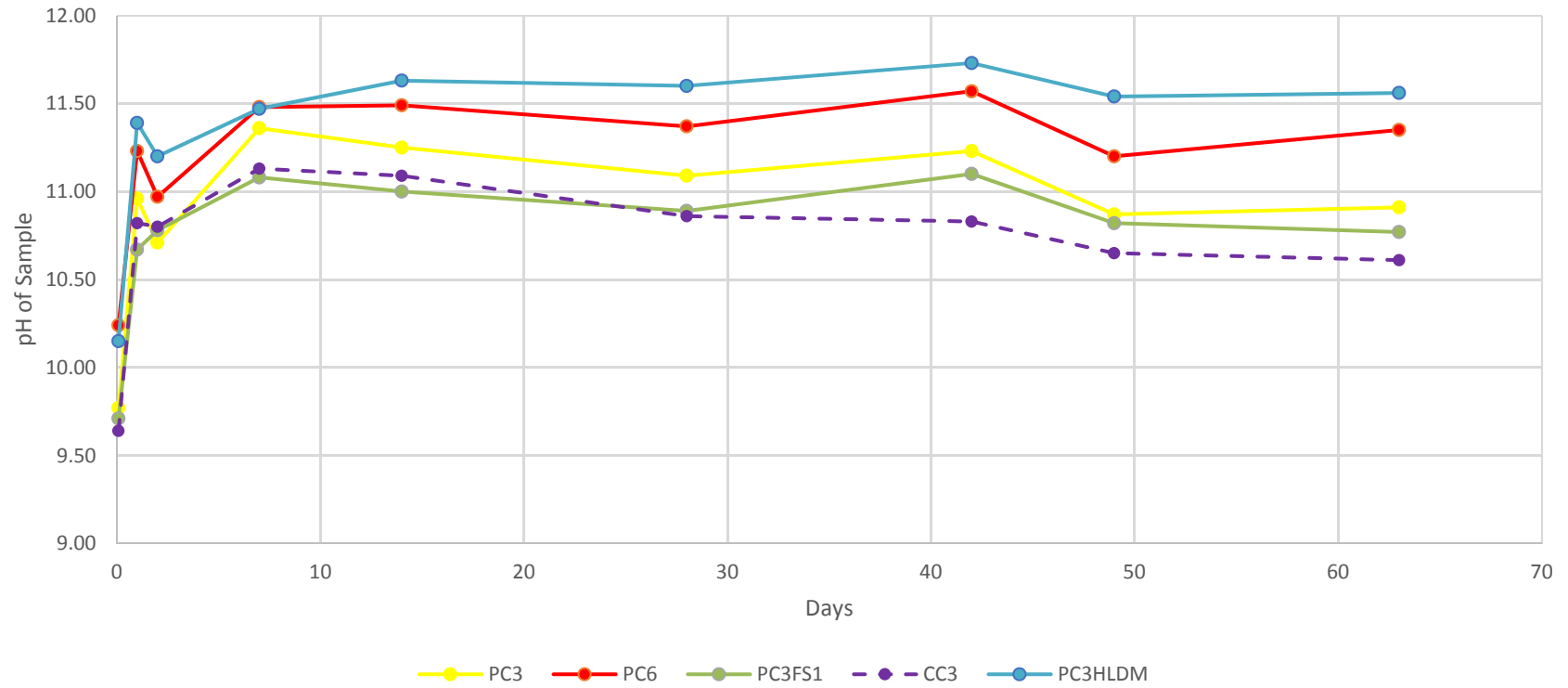
- Monolith Leachability (Method 1315)
 - 10x reduction compared to unconsolidified CCR (Method 1316)
- Increased Sequestration (Method 1312)
 - Other formulations 25% lower concentrations (particularly boron) than 6% Portland Cement formulations



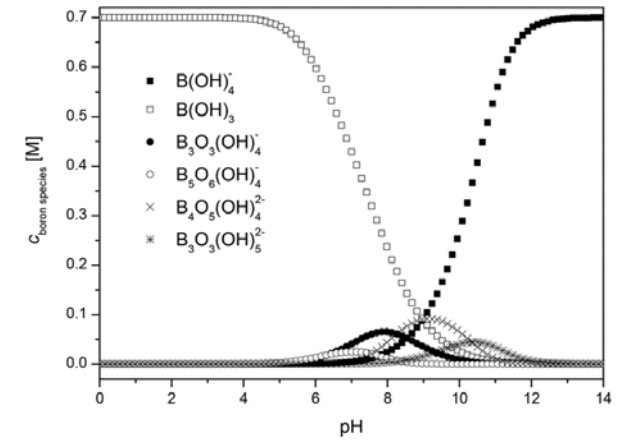
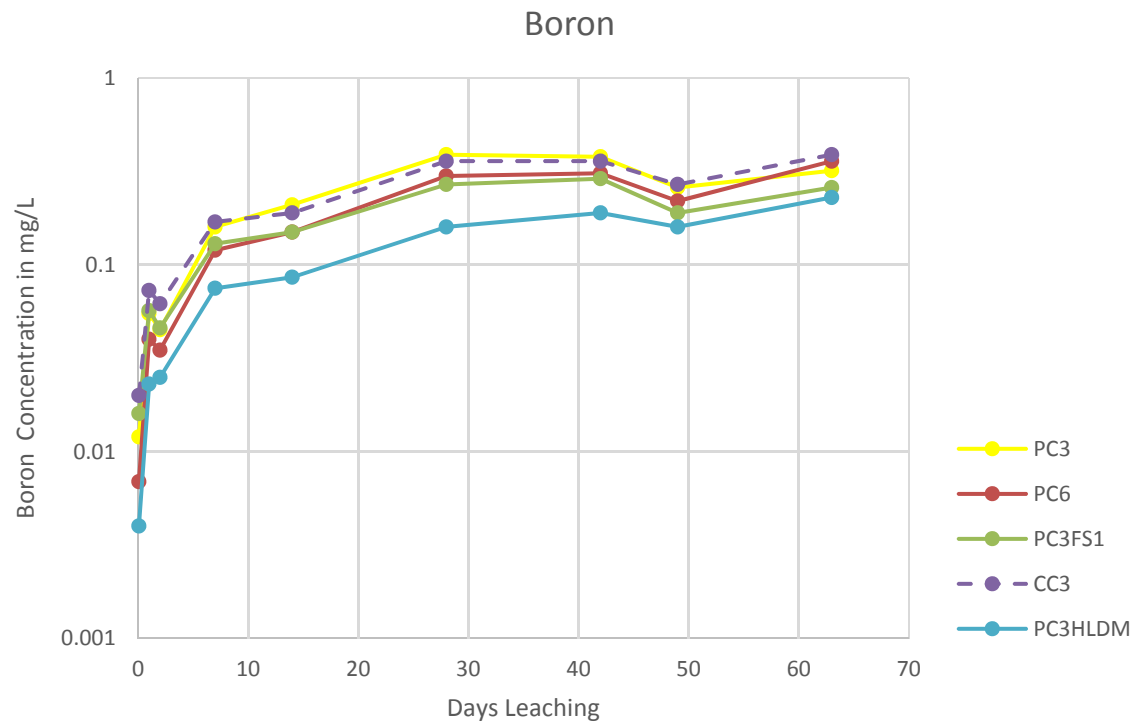
Initial Conditions



1315 pH Results



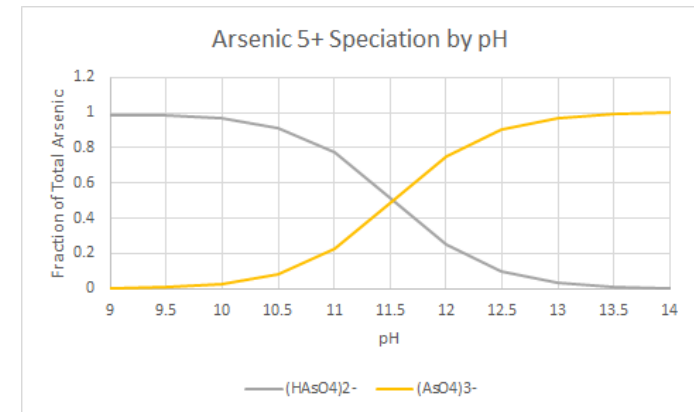
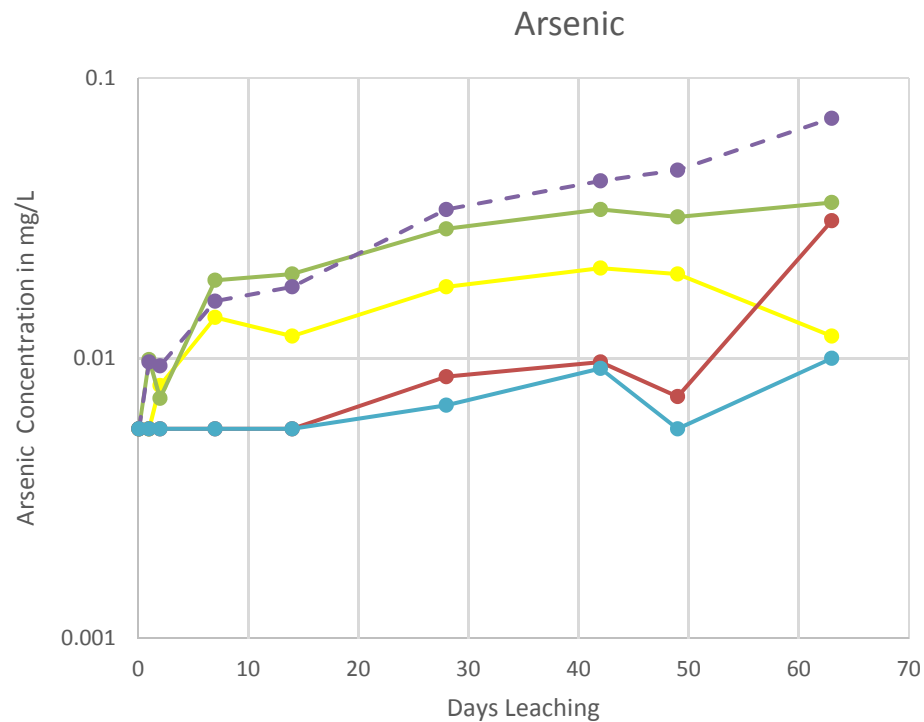
Method 1315 Concentrations – Boron



- Only PC3HLDM achieves 10-fold reduction relative to 1316
- PC6 achieves ~6-fold reduction
- Performance similar for all
- Mix V is best at each interval



Method 1315 Concentrations – Arsenic

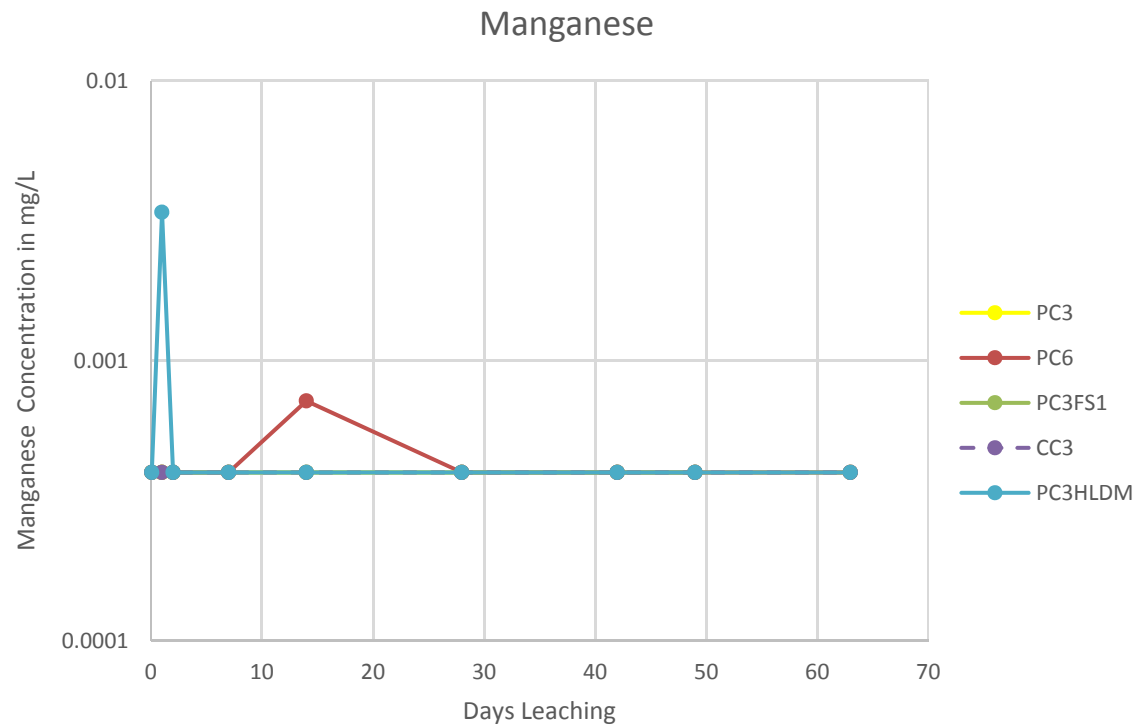


- PC3
- PC6
- PC3FS1
- CC3
- PC3HLDM

- PC3 and Mix V >10-fold lower than 1316 at 63 days
- PC6 ~7-fold reduction
- PC3HLDM best
- CC3 worst



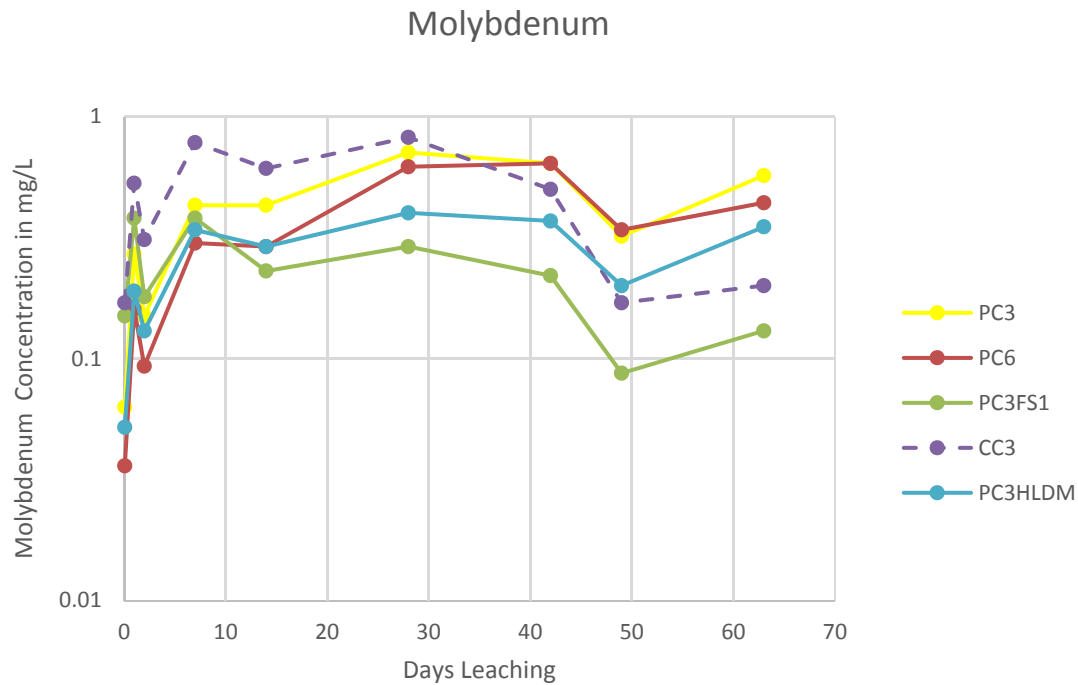
Method 1315 Concentrations - Manganese



- No mix achieves 10-fold reduction relative to 1316
- All mixes appear equal in performance, but mostly non-detects
- Detections for Mix V (24 hours) and PC6 (14 days)
- Due to non-detects, can't conclude which is best



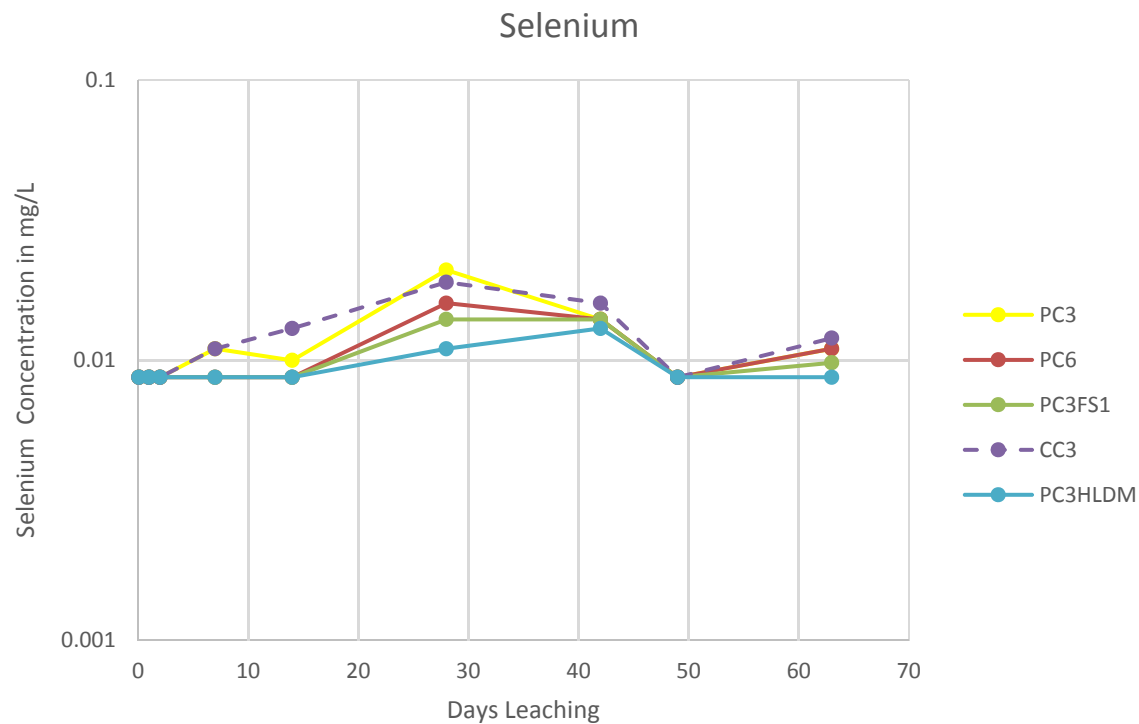
Method 1315 Concentrations – Molybdenum



- All mixes except PC3 are >10-fold lower than 1316
- PC3FS1 best performer
- PC6 provides 10-fold reduction
- PC3 lowest performer



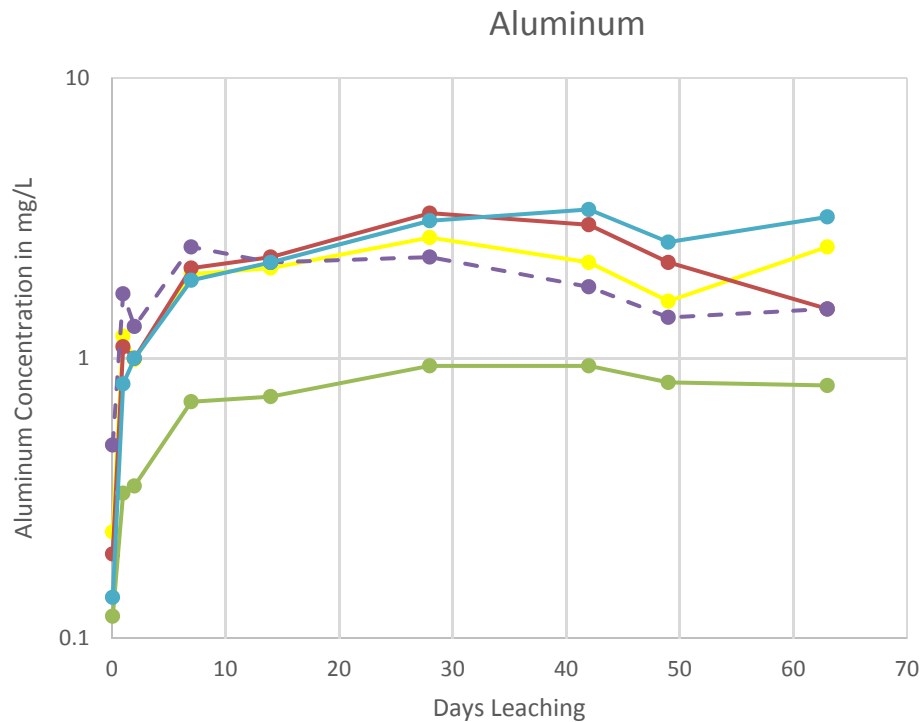
Method 1315 Concentrations – Selenium



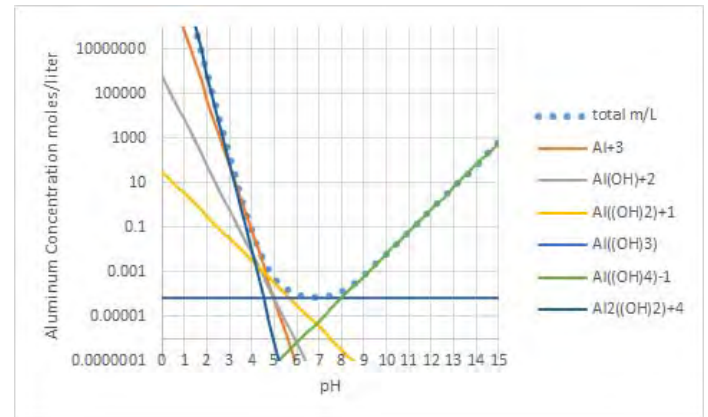
- All mixes achieve 10-fold reduction or better relative to 1316 at 63 days
- All mixes roughly equal in performance



Method 1315 Concentrations - Aluminum



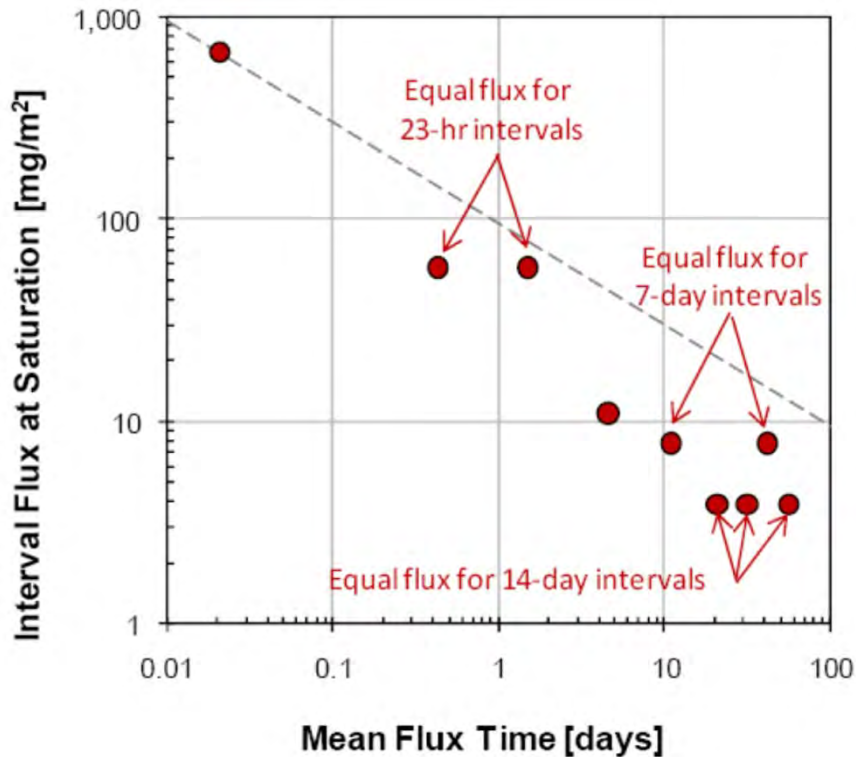
- PC3
- PC6
- PC3FS1
- CC3
- PC3HLDM



- No mix achieved reduction relative to 1316 at 63 days
- Due to addition of Al in cement and pH increase
- PC3FS1 is best performer
- PC6 second best at 63 days



Interpreting 1315 Results

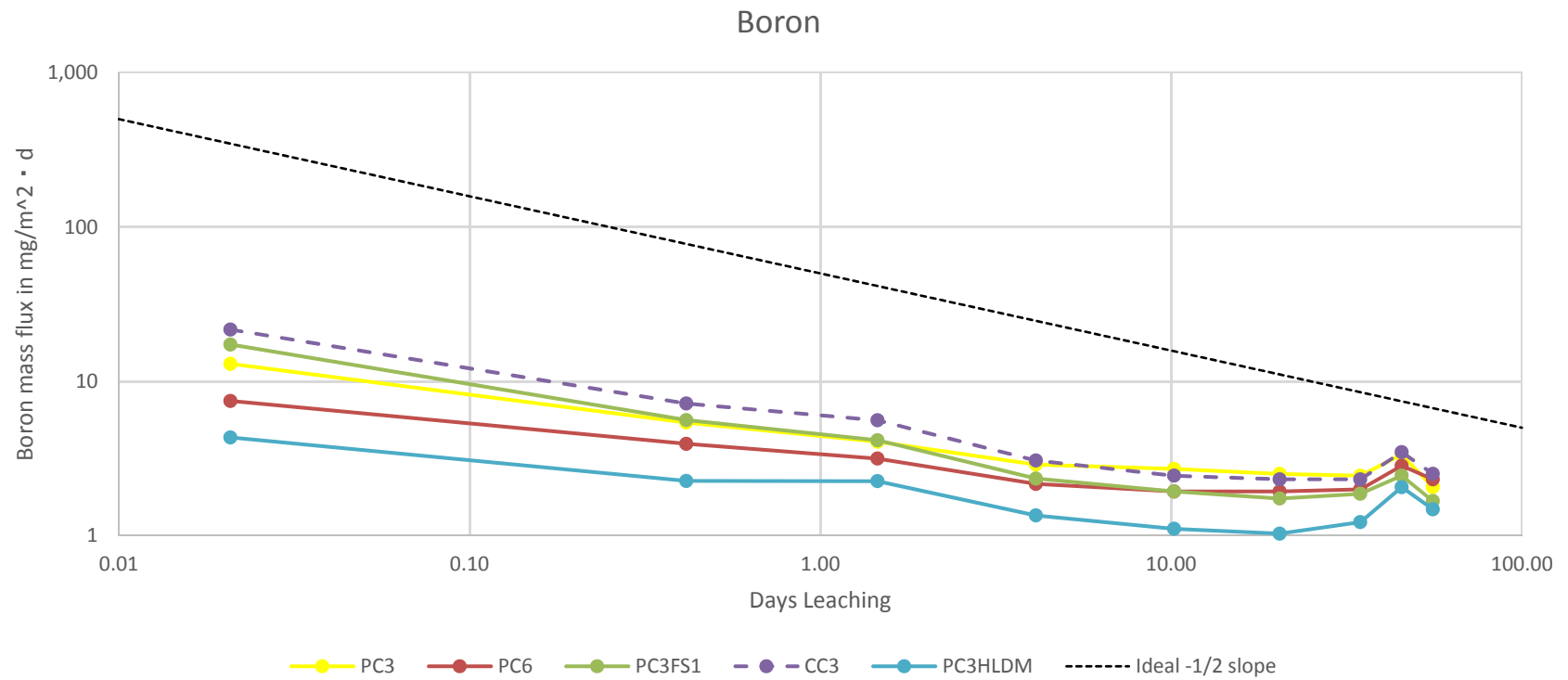


Source: EPA Method 1315, Figure 11
Interval Flux at Eluate Saturation

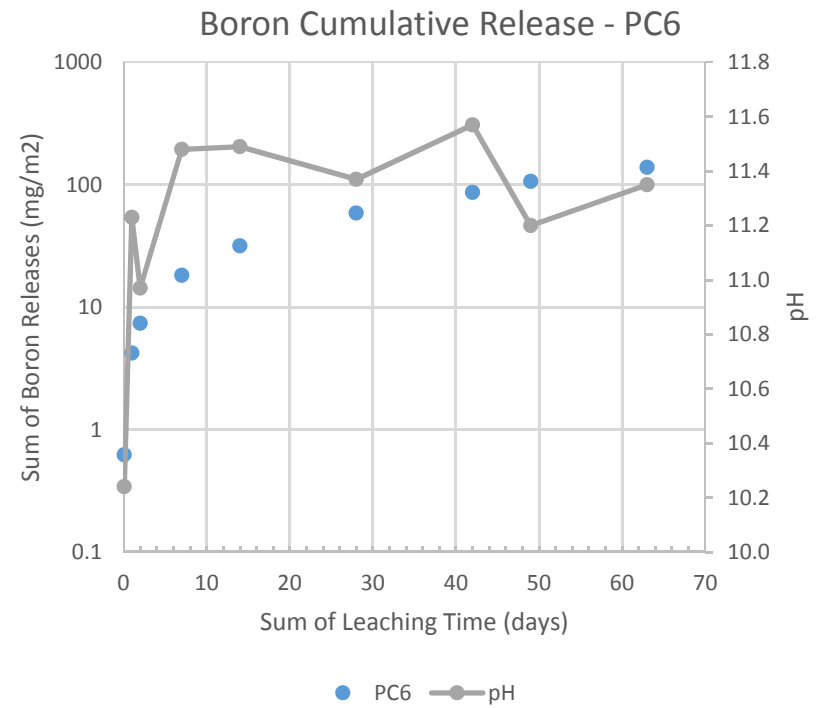
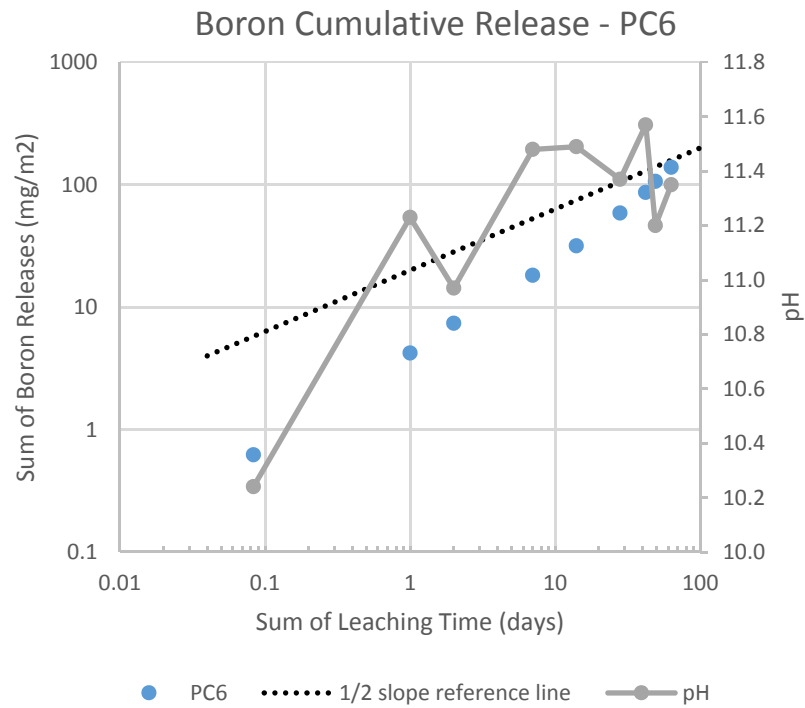
Figure 11 Note:
This figure assumes that the concentration in the eluate approaches saturation during the leaching interval (i.e., the driving force for diffusion approaches zero). When the leaching solution is saturated, the resulting mass release and interval flux is constant for intervals of the same duration.



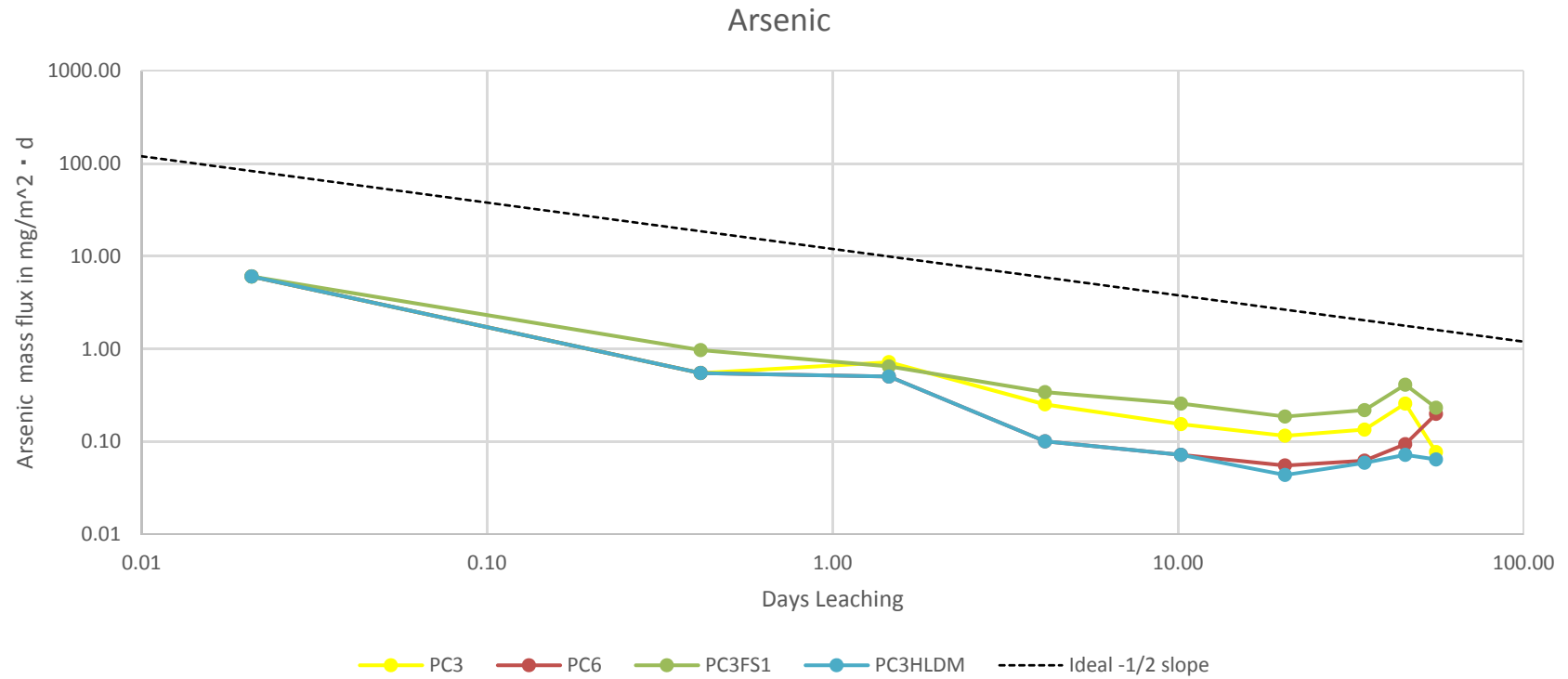
Boron – 1315 Mass Flux Chart



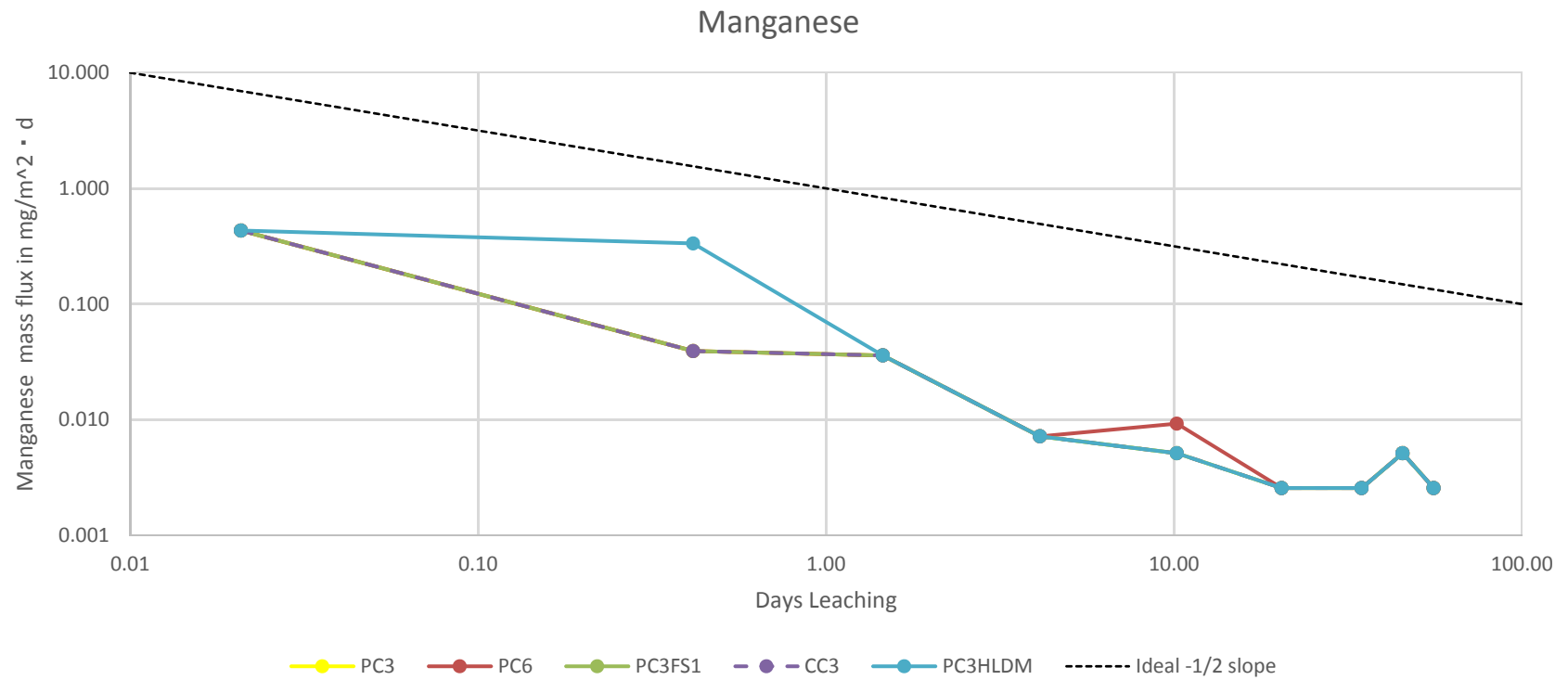
Boron – Cumulative Release



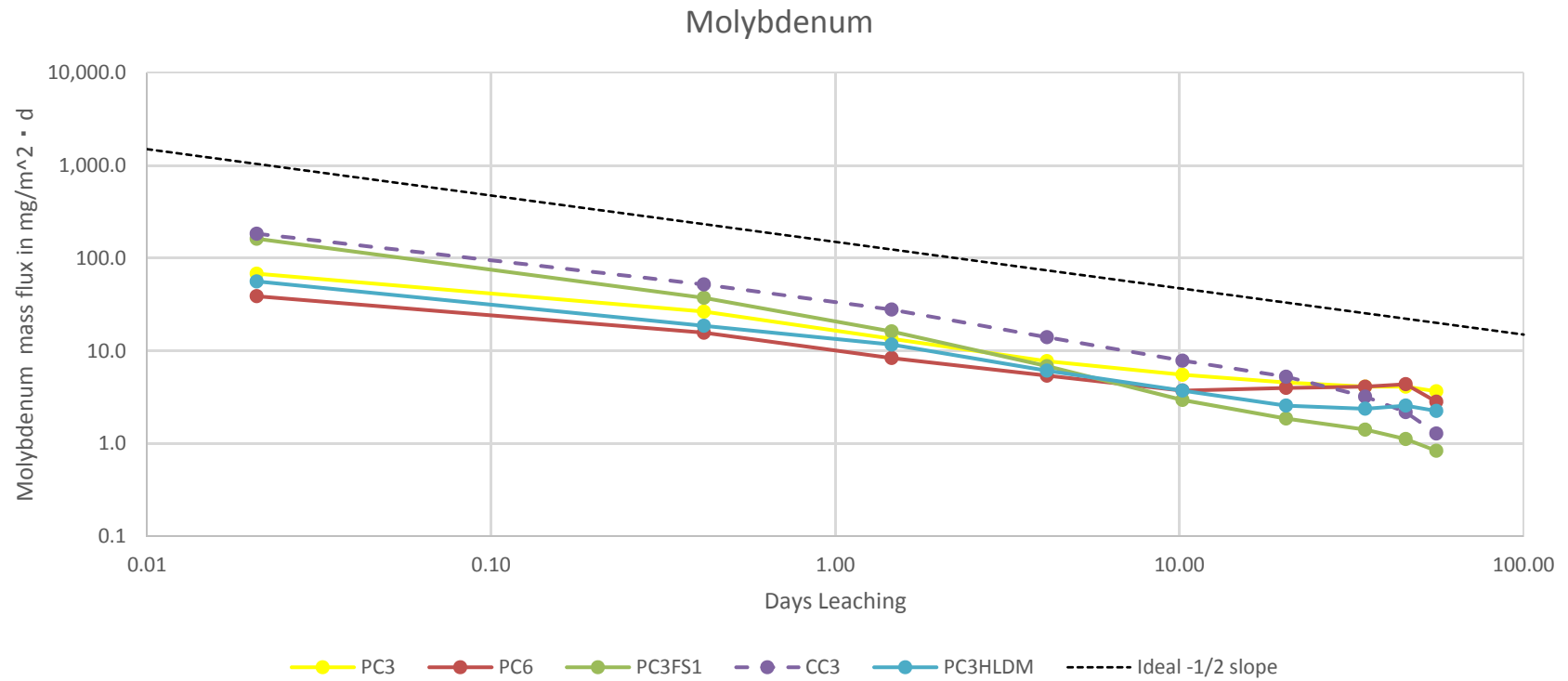
Arsenic – 1315 Mass Flux Chart



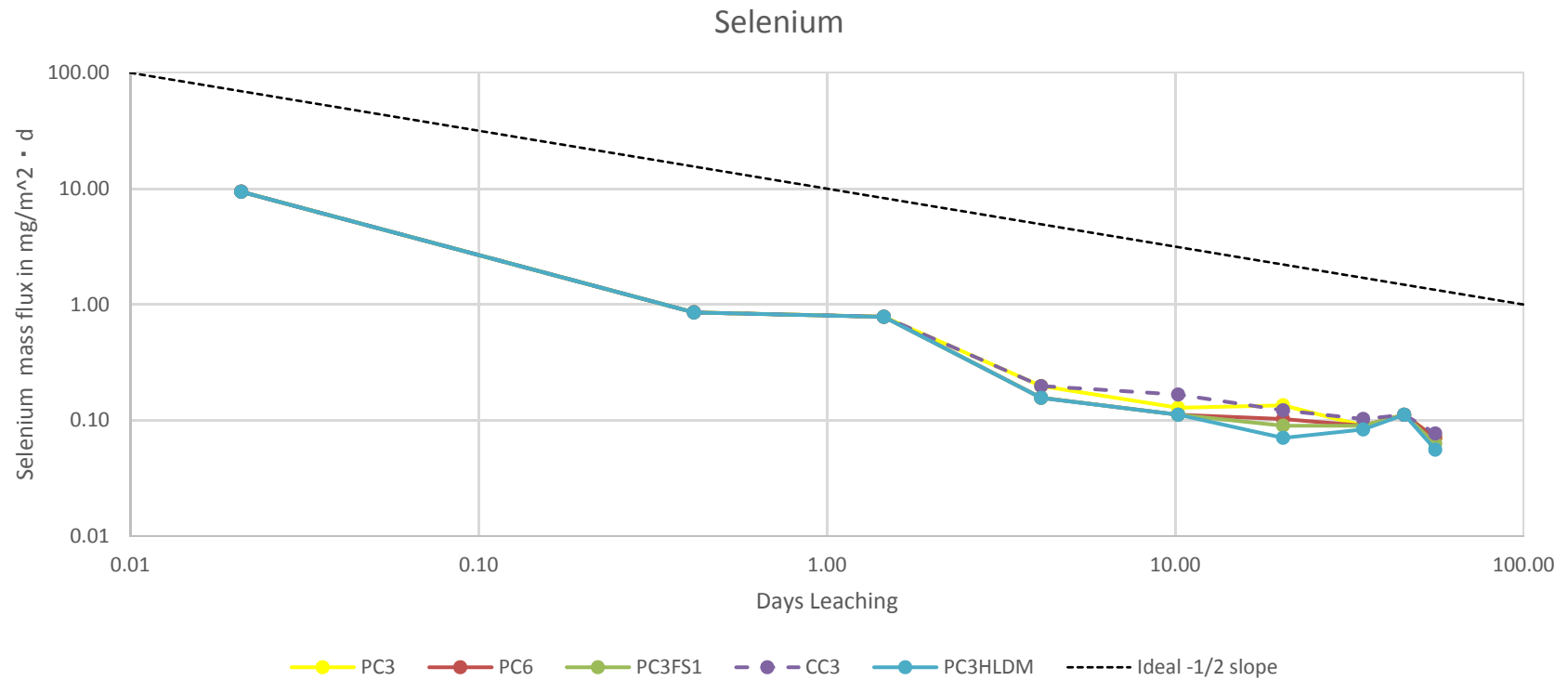
Manganese – 1315 Mass Flux Chart



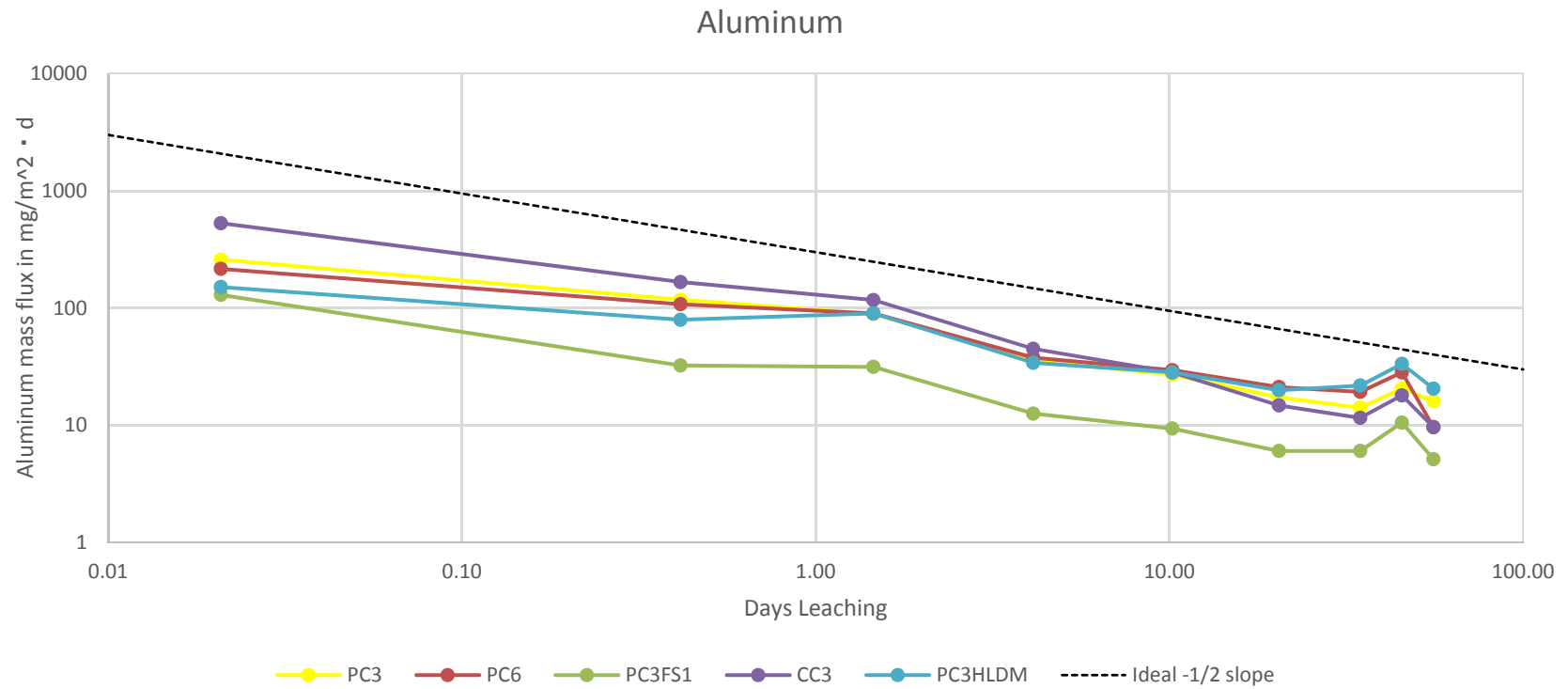
Molybdenum – 1315 Mass Flux Chart



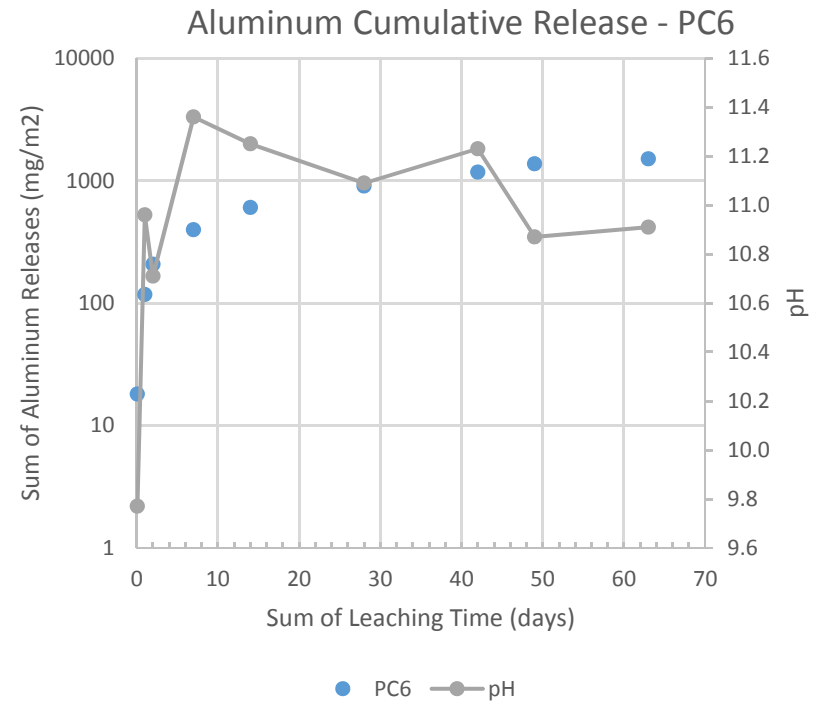
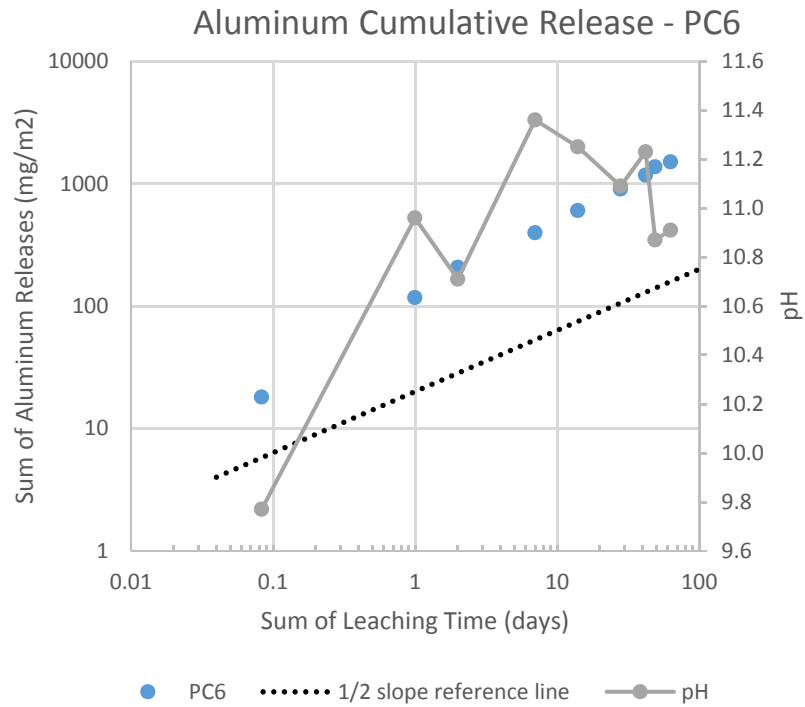
Selenium – 1315 Mass Flux Chart



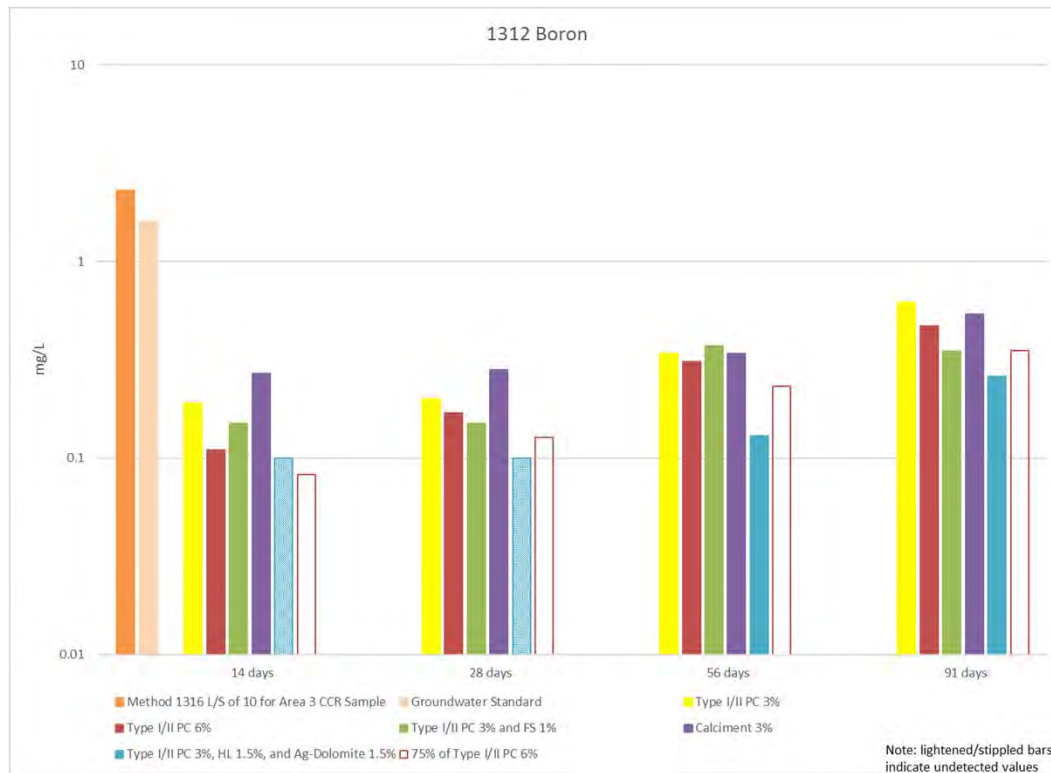
Aluminum – 1315 Mass Flux Chart



Aluminum – Cumulative Release



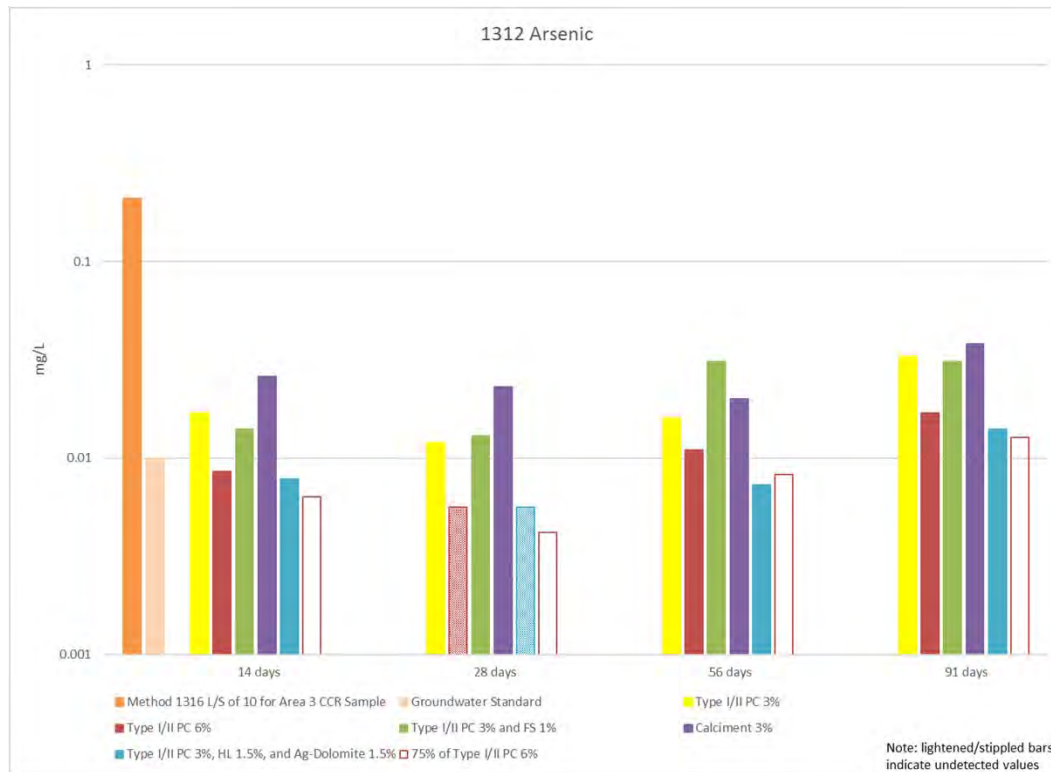
Method 1312 Results - Boron



- Mix V at 28, 56, and 91 days does 25% better than PC6, best performing overall



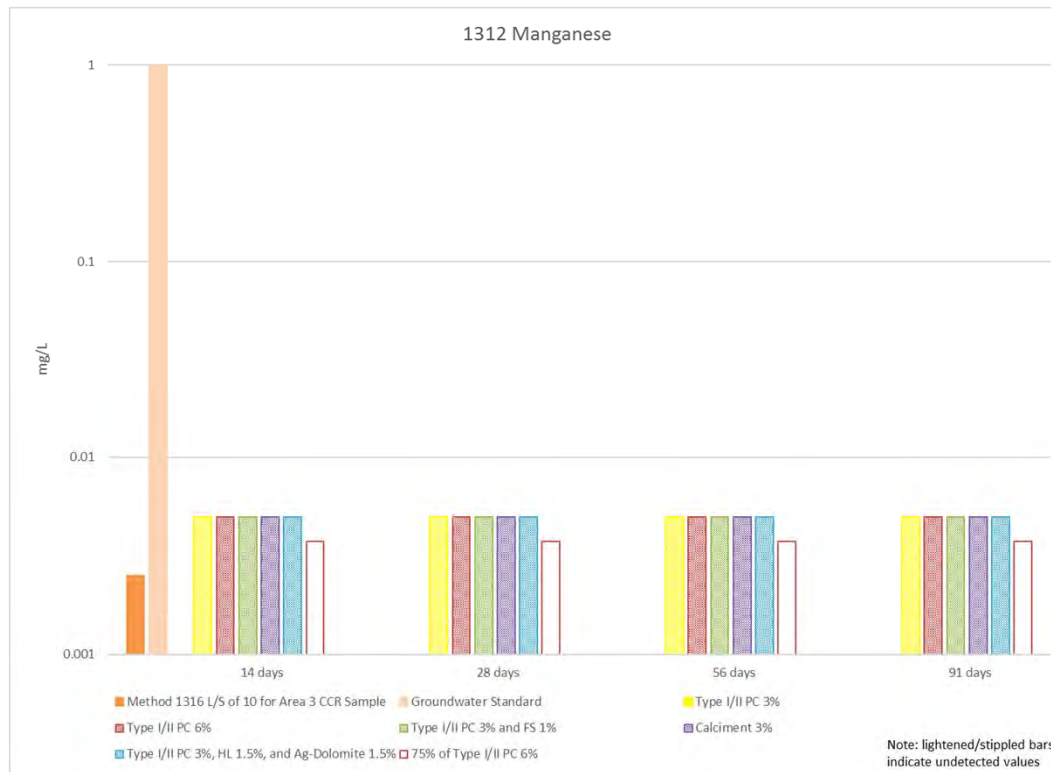
Method 1312 Results - Arsenic



- Only Mix V at 56 days performed 25% better than PC6
- PC6 second best (or non-detect) at each interval



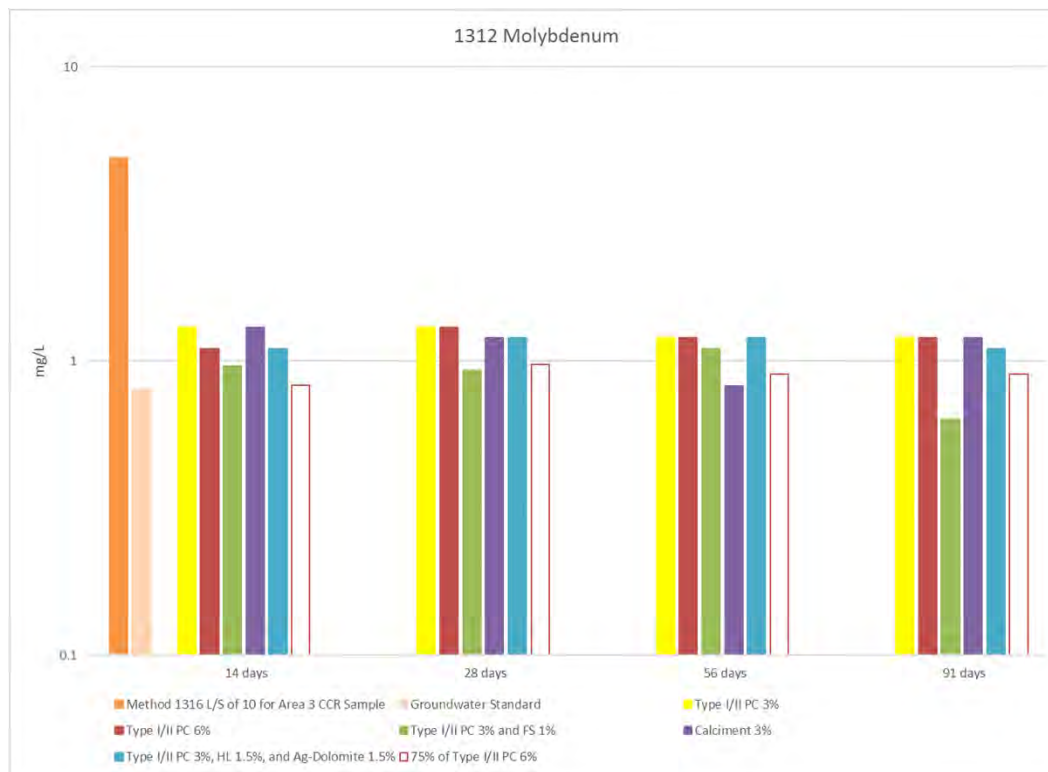
Method 1312 Results - Manganese



- All non-detects; cannot determine best performer or which does 25% better



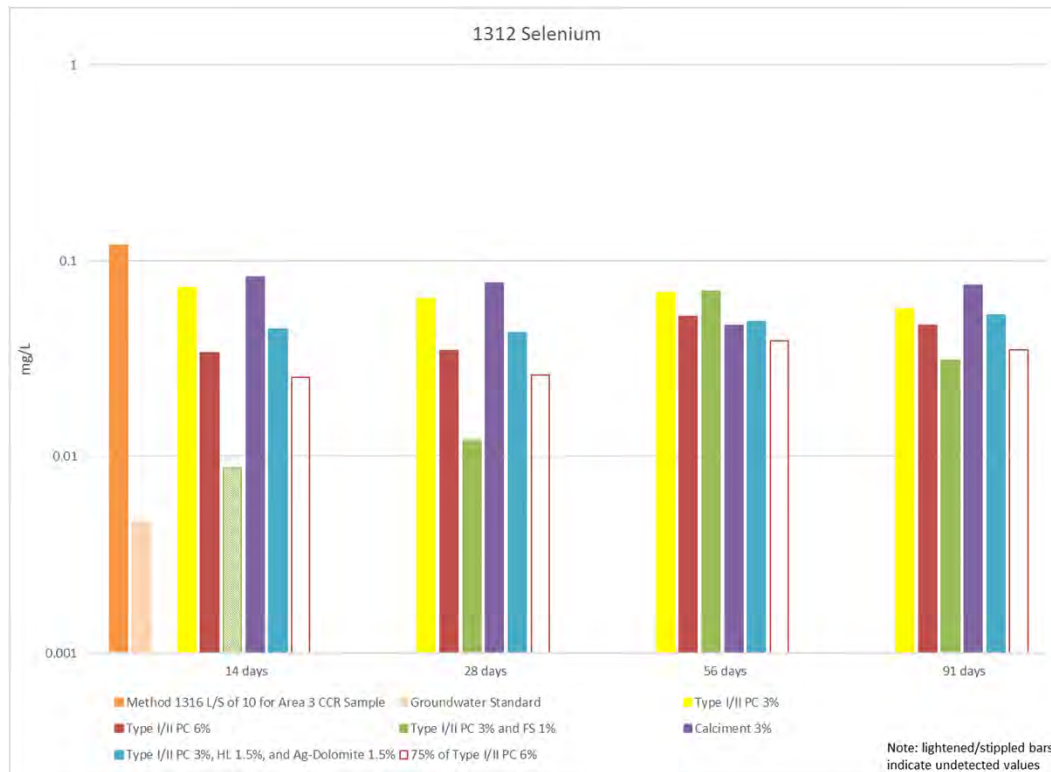
Method 1312 Results - Molybdenum



- PC6 and others roughly equal in performance
- PC3/FS1 performs >25% better at 91 days



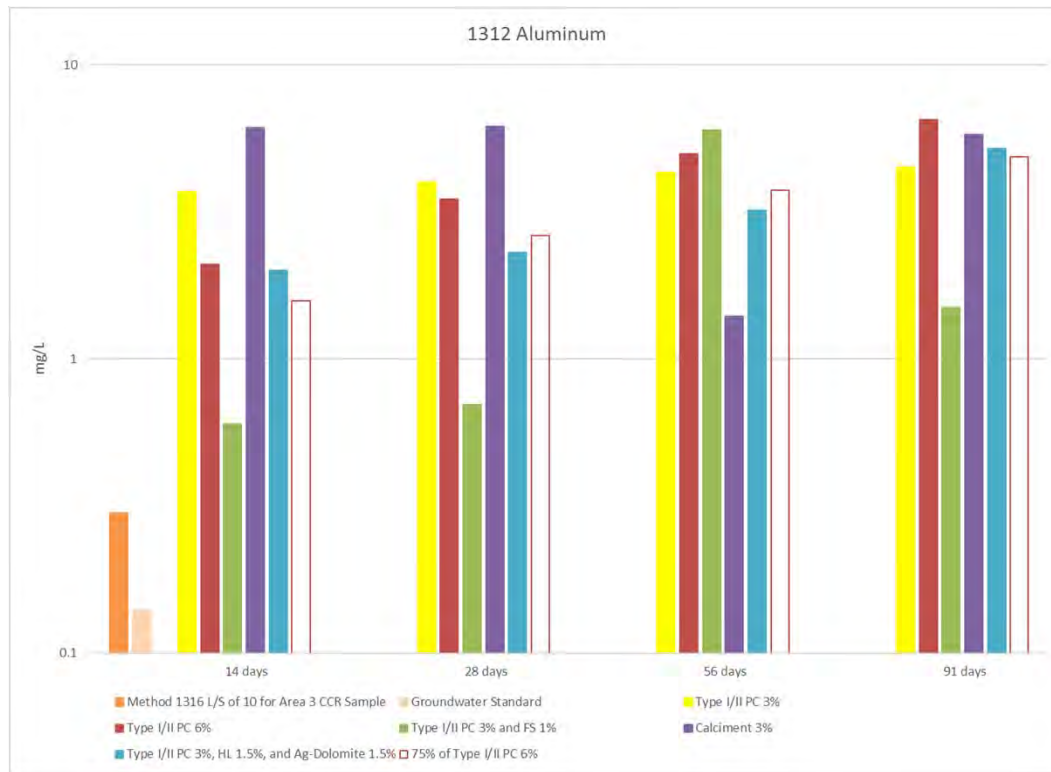
Method 1312 Results - Selenium



- PC6 is second best performer at 91 days
- PC3/FS1 performs >25% better at 91 days



Method 1312 Results - Aluminum



- PC/FS does >25% better than PC6 for most time intervals



Reagent Costs

Mix	Tons Required					Cost per Reagent					Total Cost for Reagents
	Portland Cement	Ferrous Sulfate	Calciment	Hydrated Lime	Dolomite Powder	Portland Cement	Ferrous Sulfate	Calciment	Hydrated Lime	Dolomite Powder	
1	4,814					\$626,000					\$626,000
2	9,627					\$1,252,000					\$1,252,000
3	4,814	1,605				\$626,000	\$834,000				\$1,460,000
4			4,814					\$455,000			\$455,000
5	4,814			2,407	2,407	\$626,000			\$229,000	\$168,000	\$1,023,000

Note: Mixes with reagents other than Portland cement and multiple reagents will have additional handling and labor costs, and potentially productivity impacts relative to Portland cement only mixes.



Conclusions

- PC6 generally very good performance
 - Best K value and durability
- CC3 poorest overall performer for K value, strength, and 1315 concentration
- PC3FS1 best results for 1315 Boron
- Other mixes do well for some metals
 - PC3FS1 for Al, Se
 - PC3HLDM for As



Performance Matrix

Mix	Physical Properties			Leaching		Other Factors		
	K-Value	UCS	Durability	1315	1312	Reagent Cost	Handling	Safety
PC3	Good	Good	Pass	Pass	>PC6	Moderate	Established	Well Known
PC6	Good	Fair/High	Pass	Pass	Baseline	High	Established	Well Known
PC3FS1	Fair	Good	Fail?	Pass	Similar	Highest	More Difficult	Well Known/Safe
CC3	Poor	Poor/Low	Fail?	Pass	>PC6	Lowest	Less Difficult	Contains Quicklime
PC3HLDLDM	Fair	Poor/High	Pass?	Pass	25% better	High	Most Difficult	Hydrated Lime Concerns

Notes: 1315 performance assessed based on Boron concentrations being at least 10x lower than method 1316 result.
 1312 performance assessed based on leachate concentrations at least 25% less than PC6 results as a baseline.
 Additional safety concerns for mixes containing quicklime or hydrated lime.
 All mixes met volumetric volume increase criterion of < 25%
 Durability pass/fail based on unconfined compressive strength (UCS)



Recommendation

- Move forward with PC6 mix for use in MODFLOW/MT3D
- Best overall mix of achieving primary performance criteria
 - K-value best overall, high strength and durability
 - Only PC3HLDM outperformed PC6 with respect to leaching; however, balancing this with cost, handling, and safety, advantages not significant enough
 - Reagent cost higher end of scale, but handling and safety concerns are well understood and manageable
 - Decreased handling costs will offset reagent costs



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