Mr. Ken Mallary
United States Environmental Protection Agency
61 Forsyth Street
Atlanta, Georgia 30303

Arcadis G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh
North Carolina 27607
Tel 919 854 1282
Fax 919 854 5448
www.arcadis.com

Environment

Subject:
Revised Post-Removal Action Baseline Groundwater Monitoring Report
Former Almont Fertilizer Site
Wilmington, New Hanover County, North Carolina
NC Site ID: NC002178580

Date:
October 5, 2016

Contact:
Mike Purvis

Phone:
919.415.2252

Email:
mike.purvis@arcadis.com

Our ref:
B0085757

Dear Mr. Mallary:

On behalf of ExxonMobil Environmental Services Company (EMES), Arcadis U.S., Inc. (Arcadis) has prepared this Post-Removal Action Baseline Groundwater Monitoring Report (Report) for the Former Almont Fertilizer Site (the Site) located at 2400 U.S. Highway 421 North in Wilmington, North Carolina (**Figure 1**). This Report describes groundwater monitoring well installation and baseline groundwater gauging/sampling activities completed in July and August 2015 in accordance with the *Groundwater Monitoring Plan* included within the *Post Removal Site Control Plan, Revision No. 1, Former Almont Fertilizer Site, Wilmington, New Hanover County, North Carolina* (PRSCP) (Arcadis 2015, Revision 1). As stated in the Groundwater Monitoring Plan, the purpose of these activities was to assess the improvement of groundwater quality and the success of the integrated Non-Time Critical Response Action (NTCRA) in achieving the performance standards for arsenic and lead concentrations in groundwater following the implementation of soil and sediment removal actions completed in 2013.

Activities performed include:

- Installation of eight shallow (AL-MW-02, -03, -04, -06, -07, -09, -10, and AL-MW-11) and four deep performance monitoring wells (AL-MW-02D, -03D, -04D, and AL-MW-11D) in July 2015.

- Measurement of depth-to-water within eleven shallow performance monitoring wells and four deep performance monitoring wells in August 2015.

- Baseline groundwater sampling of sixteen performance groundwater monitoring wells in August 2015.

BACKGROUND

The Site consists of approximately 38.5 acres of land located at 2400 U.S. Highway 421 North in Wilmington, New Hanover County, North Carolina; as shown on the United States Geological Survey 7.5-minute quadrangle map (**Figure 1**). The geographical location of the center of the Site is at approximately 34.269964° North Latitude and 77.955061° West Longitude.

The Site is bounded to the west by vacant undeveloped land, to the south by a junk yard owned by Horton Iron & Metal Co., to the east by the Northeast Cape Fear River, and to the north by the Norris and Carolyn Flowers (Flowers) property, which includes a fruit and seafood store along U.S. Highway 421. The property located north of the Flowers property is owned by Southern States Chemical Company, formerly owned by the Northeast Chemical Company, which manufactures sulfuric acid.

Fertilizer manufacturing began at the Site sometime prior to 1904. Historical information lists Virginia-Carolina Chemical Company as operating the Site until they declared bankruptcy in 1924. In 1926, at the conclusion of the bankruptcy and reorganization proceedings, Virginia-Carolina Chemical Corporation of Richmond, Virginia (VCC) emerged as a new company and continued to own the Site. Operation of the facility ceased in 1942, and in 1943 VCC sold the property to V.P. Loftis. VCC merged into Socony Mobil Oil Company, Inc. in 1963, and the company name changed in 1966 to Mobil Oil Corporation (Mobil). In 1999, Exxon Corporation merged with Mobil to form Exxon Mobil Corporation. Mobil became ExxonMobil Oil Corporation, the corporate successor to VCC. Exxon Mobil Corporation is the parent corporation of ExxonMobil Oil Corporation.

North Carolina Department of Environment and Natural Resources (NCDENR) reported that the Site was operated as a fertilizer manufacturing facility until World War II (WWII), at which point the United States government operated a munitions warehouse and a military barge repair facility on the property. After WWII, the Site again operated as a fertilizer facility. Property owners since 1946 included Robertson Chemical, W.R. Grace, Wilmington Fertilizer, John F. McNair, WS Clark & Sons, Royster-Clark, and Agrium U.S., Inc. (Agrium). Agrium stopped fertilizer production in 1998 and used the facility for fertilizer storage and distribution. In late 2011, Agrium closed the facility. Subsequently, Exxon Mobil Corporation and Agrium negotiated an agreement whereby Agrium would demolish all aboveground structures on the property (Arcadis 2012). Demolition activities were completed in 2012.

EMES implemented removal action activities for soil, sediments, and groundwater in 2012 and 2013 in accordance with the approved Removal Action Delineation Report/Removal Action Work Plan (Arcadis 2012). Removal action activities consisted of the removal, stabilization, and off-site disposal of soil and sediment which was visibly impacted or otherwise contained lead and/or arsenic concentrations that exceed the industrial criteria for soil. In addition, removal action activities included backfilling the saturated zone excavation with clean imported structural fill designed to maintain a range of

permeability's equal to or exceeding the permeability of the surrounding native soil. Enhanced geochemical sequestration of arsenic and lead in ground water has been accomplished through the addition of amendments to the backfill placed in the saturated zone.

As described in the *Removal Action Completion Report, Former Almont Fertilizer Plant Site, Wilmington, North Carolina* (RACR) (Arcadis 2013), impacted soils were removed to the extent practical. Some impacted soils were left in place and were covered with a demarcation liner consisting of orange construction fencing and capped with a clean soil cover (approximately 2 feet minimum thickness) consisting of off-site fill materials placed during site restoration activities to prevent incidental contact with the underlying soils in the future. Please note that prior to removal action activities, eight existing monitoring wells (AL-MW-02, -03, -04, -06, -07, -09, -10, and AL-MW- 11) and two deep monitoring wells (AL-MW-02D and AL-MW-04D) were properly abandoned by a NC-licensed well driller.

GROUNDWATER MONITORING WELL INSTALLATION ACTIVITIES

July 2015, eight shallow (AL-MW-02, -03, -04, -06, -07, -09, -10, and AL-MW-11) and four deep (AL-MW-02D, -03D, -04D, and AL-MW-11D) groundwater performance monitoring wells were installed as part of the groundwater performance monitoring well network established to assess arsenic and lead concentrations beneath the Site. It should be noted that monitoring wells AL-MW-01, -05, -08, and AL-MW-12 were installed during previous site investigation activities conducted by Arcadis in November 2009 and January 2011.

All shallow performance monitoring wells were constructed of 2-inch diameter, Schedule 40 polyvinyl chloride (PVC) connected to 10 feet of 0.010-inch slotted screen. All deep performance monitoring wells were constructed with 2-inch diameter Schedule 40 PVC connected to 5 feet of 0.010-inch slotted screen. At the deep monitoring well locations, impacted soils were observed below the saturated zone; therefore, a 6-inch diameter protective outer casing was installed below the depth where magenta-stained soil/slag was observed to reduce the potential drag-down of impacted soils. Upon completion, all performance monitoring wells were developed in accordance with the Groundwater Monitoring Plan within the PRSCP (Arcadis 2015, Revision 1). Groundwater monitoring well construction details are summarized in **Table 1** and provided in **Attachment A**.

GROUNDWATER GAUGING AND SAMPLING ACTIVITIES

On August 3, 2015, Arcadis measured depth-to-water at eleven shallow performance monitoring wells (AL-MW-01 through AL-MW-11) and four deep performance monitoring wells (AL-MW-02D, -03D, -04D, and AL-MW-11D). Arcadis was unable to obtain a water level measurement from AL-MW-12 due to the area surrounding the location being flooded. Groundwater levels were measured from the top of each well casing to an accuracy of +/- 0.01-foot using an electronic water level indicator. The groundwater elevation at each well was then calculated using surveyed top-of-casing elevations along with the depth to water measurements. Groundwater elevation data are provided in **Table 1** and field documentation is included in **Attachment B**. The calculated water level elevations were used as the basis of developing a potentiometric surface map (**Figure 2**).

Upon measuring depth-to-water, Arcadis collected groundwater samples from the twelve shallow and four deep performance monitoring wells on August 4 through August 5, 2015 using low-flow/low stress (minimal drawdown) sampling techniques. The low-flow methods involved purging and sampling the groundwater monitoring wells with a peristaltic pump equipped with dedicated polyethylene tubing. The tubing inlet was positioned in the middle of the screened interval of each groundwater monitoring well. Prior to final collection of the water sample, a portable electronic probe with a flow-through cell (i.e., YSI 556) was used to measure field parameters (i.e., pH, specific conductivity, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential) during purging activities. Field parameters were measured in five-minute intervals until each parameter had stabilized for three consecutive readings. The final stabilized field parameter measurements are provided in **Table 2** and field documentation is included in **Attachment B**. The observed pH from the August 2015 groundwater sampling event varied from 4.41 (AL-MW-09) to 12.64 (AL-MW-04D). The results of field pH measurements are presented on **Figure 3**.

Upon stabilization of the field parameter measurements, groundwater was sampled from each groundwater monitoring well and retained in pre-preserved, laboratory provided containers, placed in a cooler on wet ice, and shipped to TestAmerica Laboratories Inc. (TestAmerica) in Nashville, Tennessee under appropriate chain-of custody requirements and analyzed for both total and dissolved arsenic and lead by United States Environmental Protection Agency (USEPA) SW846 Method 6010C. In addition, quality assurance/quality control (QA/QC) samples, including one equipment rinsate blanks, one blind duplicate and one matrix spike/matrix spike duplicate (MS/MSD) were collected and submitted for laboratory analysis.

SUMMARY OF RESULTS – SHALLOW PERFORMANCE MONITORING WELLS

In accordance with the PRSCP, arsenic and lead concentrations detected in the shallow performance monitoring wells were compared to the site-specific action levels (SSALs) for arsenic and lead of 0.01 milligrams per liter (mg/L) and 0.015 mg/L, respectively, which are consistent with the North Carolina groundwater standards (15A NCAC 2L). A summary of results of total and dissolved arsenic and lead in groundwater is presented in **Table 2** and the laboratory analytical report is included in **Attachment C**.

Total lead concentrations were above the SSALs in two shallow performance monitoring wells with concentrations varying from 0.0235 mg/L (Al-MW-09) to 0.0728 mg/L (AL-MW-04). Dissolved lead concentrations were above the 15A NCAC 2L standard in two shallow performance monitoring wells with concentrations varying from 0.0228 mg/L (Al-MW-09) to 0.0564 mg/L (AL-MW-04).

Total arsenic concentrations were above the SSAL in eight of the shallow performance monitoring wells with concentrations varying from 0.0138 mg/L (ALMW-08) to 4.73 mg/L (AL-MW-04). Dissolved arsenic concentrations were above the SSAL in seven of the shallow performance monitoring wells with concentrations varying from 0.0159 mg/L (AL-MW-08) to 4.75 mg/L (AL-MW-04). **Figures 4** and **5** depict the distribution of total and dissolved arsenic and lead in groundwater, respectively.

SUMMARY OF RESULTS – DEEP PERFORMANCE MONITORING WELLS

In accordance with the PRSCP, arsenic and lead concentrations detected in the deep performance monitoring wells were compared to the SSALs for arsenic and lead of 0.01 mg/L and 0.015 mg/L, respectively. A summary of results of total and dissolved arsenic and lead in groundwater is presented in **Table 2** and the laboratory analytical report is included in **Attachment C**.

Total and dissolved lead concentrations were below the SSALs in all deep performance monitoring wells.

Total arsenic concentrations were above the SSAL in two of the deep performance monitoring wells with concentrations varying from 0.0325 mg/L (AL-MW-02D) to 0.280 mg/L (AL-MW-03D). Dissolved arsenic concentrations were above the SSAL in two of the deep performance monitoring wells with concentrations varying from 0.0354 mg/L (AL-MW-02D) to 0.290 mg/L (AL-MW-03D). **Figures 4** and **5** depict the distribution of total and dissolved arsenic and lead in groundwater, respectively.

As part of this groundwater monitoring event, a duplicate set of groundwater samples was sent to ALS Environmental of Kelso, Washington (ALS) and was analyzed for:

- Arsenic (Dissolved and Total) – SW-846-7062

The goal of the analyses performed by ALS was to verify the results obtained by TestAmerica and evaluate whether or not those results reported via SW-846 6010C may be subject to potential interferences from rare earth elements (REEs) that may or may not be present in Site groundwater. A comparison of arsenic results reported via SW-846 Method 6010C and 7062 is provided in **Table 3**. As indicated, the analytical results obtained from these methods are similar indicating that potential interferences from REEs (if present) are minimal.

INVESTIGATION-DERIVED WASTE

Investigation-derived waste (IDW) generated as part of the well installation and groundwater sampling activities (i.e., soil, drill mud, groundwater, and decontamination fluids) were containerized into forty-eight properly labeled 55-gallon steel drums. Drums containing solids were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, while drums containing aqueous solutions were analyzed for target analyte list (TAL) metals and pH. A summary of detected analytes is provided in **Tables 4** and **5** and the laboratory analytical report is included in **Attachment C.** Based on the analytical results, the waste material was characterized as non-hazardous. All IDW was disposed of off-site in accordance with all applicable regulations. A copy of the waste manifest is provided in **Attachment D**.

DATA VALIDATION

Laboratory analytical data were validated by Arcadis as required by the PRSCP. Data validation entails a review of the quality control (QC) data and the raw data to verify that the laboratory was operating within

required limits, the analytical results are correctly transcribed from the instrument read outs, and which, if any, environmental samples are related to any deficient QC samples. The objective of the data validation is to identify any questionable or invalid laboratory measurements and to determine if the quality is sufficient to meet the data quality objectives. The data validation report is included as **Attachment C**.

RECOMMENDATIONS

Arcadis recommends that all future groundwater samples collected at the Site be analyzed for arsenic and lead (total and dissolved) via USEPA Method SW-846 6020 in an attempt to eliminate the potential for matrix interference and obtain lower reporting limits.

In accordance with the PRSCP, the next semi-annual groundwater monitoring event is scheduled to be performed in February 2016. A semi-annual groundwater monitoring report will be provided following the completion of the field work and validation of analytical data.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Arcadis G&M of North Carolina, Inc.

Mike Purvis

Project Manager

Copies:
Mr. David Mattison, NCDEQ
Mr. Bruce Frink, EMES
Mr. Daren Couture (Agrium)
Mr. Bill Weis (Agrium)
Ms. Kirstyn White (Arcadis)
File: B0085757

Enclosures:

Tables

1 Summary of Monitoring Well Network and Groundwater Elevations

2 Summary of Field Parameter Measurements and Groundwater Analytical Results

3 Comparison of Arsenic Results Obtained from Competing Analytical Methods

4 Summary of Solid IDW Sample Analytical Results

5 Summary of Liquid IDW Sample Analytical Results

Figures

1 Site Location Map

2 Potentiometric Surface Map – August 3, 2015

3 Groundwater pH Map – August 2015

4 Arsenic in Groundwater – August 2015

5 Lead in Groundwater – August 2015

Attachments

A Well Construction Details and Water Well Records

B Field Documentation

C Laboratory Analytical Report and Data Validation Report

D Waste Manifest Documentation

Tables

DRAFT

Table 1
Summary of Monitoring Well Network and Groundwater Elevations
Post-Removal Action Baseline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North Carolina

Monitoring Well ID	Monitoring Well Installation Date	[1]Surveyed TOC Elevation (feet amsl)	Ground Surface Elevation (feet amsl)	Screened Interval (feet bgs)		Screened Interval (Elevation)		August 3, 2015	
				Top of Screen	Bottom of Screen	Top of Screen	Bottom of Screen	Depth to Water from TOC	Groundwater Elevation (feet amsl)
Shallow Performance Monitoring Wells									
AL-MW-01	11/17/2009	7.20	4.18	3.60	13.60	0.6	-9.4	4.28	2.92
AL-MW-02[2]	7/14/2015	7.68	4.71	4.50	14.50	0.2	-9.8	6.02	1.66
AL-MW-03[2]	7/9/2015	9.36	6.46	4.35	14.35	2.1	-7.9	7.78	1.58
AL-MW-04[2]	7/8/2015	6.37	3.49	4.52	14.52	-1.0	-11.0	4.44	1.93
AL-MW-05	11/17/2009	6.54	3.76	3.39	13.39	0.4	-9.6	3.52	3.02
AL-MW-06[2]	7/7/2015	6.74	3.50	3.88	13.88	-0.4	-10.4	4.15	2.59
AL-MW-07[2]	7/7/2015	7.29	4.30	3.96	13.96	0.3	-9.7	4.65	2.64
AL-MW-08	1/12/2011	5.10	5.41	3.41	13.41	2.0	-8.0	2.55	2.55
AL-MW-09[2]	7/10/2015	6.57	3.66	4.49	14.49	-0.8	-10.8	4.79	1.78
AL-MW-10[2]	7/10/2015	6.01	3.01	4.19	14.19	-1.2	-11.2	3.86	2.15
AL-MW-11[2]	7/14/2015	6.62	3.47	4.40	14.40	-0.9	-10.9	4.48	2.14
AL-MW-12	1/19/2011	4.17	1.21	3.69	13.69	-2.5	-12.5	NA	NA
Deep Performance Monitoring Wells									
AL-MW-02D[2]	7/21/2015	7.25	4.61	31.30	36.30	-26.7	-31.7	5.68	1.57
AL-MW-03D	7/20/2015	9.11	6.15	32.79	37.79	-26.6	-31.6	7.50	1.61
AL-MW-04D[2]	7/17/2015	6.40	3.36	28.82	33.82	-25.5	-30.5	4.52	1.88
AL-MW-11D	7/16/2015	6.04	3.28	32.14	37.14	-28.9	-33.9	4.07	1.97

Notes:

[1]Elevations are based in feet relative to the National American Vertical Datum of 1988.

[2]Monitoring wells were abandoned prior to removal activities and reinstalled in July 2015.

NA - data not readily avaiable.

TOC = top-of-casing

amsl = above mean sea level

Table 2
Summary of Field Parameter Measurements and Groundwater Analytical Results
Post-Removal Action Bsaeline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North, Carolina

Location ID:	NCAC 2L Standards	AL-MW-01 08/04/15	AL-MW-02 08/04/15	AL-MW-02D 08/04/15	AL-MW-03 08/04/15	AL-MW-03D 08/04/15	AL-MW-04 08/04/15	AL-MW-04D 08/04/15	AL-MW-05 08/04/15	AL-MW-06 08/04/15
Total Metals										
Arsenic (mg/L)	0.01	0.0377	0.352	0.0325	0.348	0.280	4.73	<0.0100	<0.0100	0.0146
Lead (mg/L)	0.015	0.00250 J	0.00460 J	0.00510	<0.00500	0.00520	0.0728	<0.00500	<0.00500	<0.00500
Dissolved Metals										
Arsenic (mg/L)	0.01	0.0395	0.326	0.0354	0.354	0.290	4.75	<0.0100	<0.0100	<0.0100
Lead (mg/L)	0.015	0.00350 J	0.00470 J	0.00470 J	0.00290 J	0.00690	0.0564	<0.00500	<0.00500	<0.00500
Field Parameters										
pH (S.U.)	--	5.64	6.63	6.46	5.94	5.99	6.18	12.64	5.93	6.25
Specific Conductivity (mS/cm)	--	0.841	3.290	1.406	1.788	5.383	2.55	3.268	0.217	0.376
Turbidity (NTU)	--	3.3	4.7	7.0	4.3	4.0	3.4	5.0	2.0	1.0
Dissolved Oxygen (mg/L)	--	0.30	0.30	0.00	0.60	0.10	1.44	0.13	0.00	0.00
Temperature (C)	--	22.14	22.66	22.28	23.99	23.00	24.52	23.35	22.95	24.38
ORP (mV)	--	-45.00	-148.0	-86.0	39.5	173.0	-79.0	-78.0	-43.0	-60.0

Notes:

Monitoring wells AL-MW-01, -03, -04, -06, -07, -09, -10, -11, -2D, and AL-MW-04D were abandoned prior to removal activities and reinstalled in July 2015.

Shaded values exceed 15A NCAC criteria.

Bracketed value indicates duplicate sample result.

mg/L = milligrams per liter.

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

J = Indicates an estimated value.

S.U. = standard units

C = Celsius

mg/L = miligrams per liter

mS/cm = millisiemens per centimeter

mV = millivolts

NTU = Nephelometric Turbidity Units

Table 2
Summary of Field Parameter Measurements and Groundwater Analytical Results
Post-Removal Action Bsaeline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North, Carolina

Location ID:	NCAC 2L Standards	AL-MW-07 08/04/15	AL-MW-08 08/04/15	AL-MW-09 08/04/15	AL-MW-10 08/04/15	AL-MW-11 08/04/15	AL-MW-11D 08/04/15	AL-MW-12 08/05/15
Total Metals								
Arsenic (mg/L)	0.01	0.0715	0.0138	0.202	<0.0100	<0.0100 [<0.0100]	<0.0100	0.0201
Lead (mg/L)	0.015	0.00290 J	0.00320 J	0.0235	0.00200 J	0.00390 J [0.00380 J]	0.00460 J	0.00530
Dissolved Metals								
Arsenic (mg/L)	0.01	0.0692	0.0159	0.167	<0.0100	<0.0100 [<0.0100]	<0.0100	0.0194
Lead (mg/L)	0.015	0.00330 J	<0.00500	0.0228	<0.00500	0.00330 J [<0.00500]	0.00510	0.00520
Field Parameters								
pH (S.U.)	--	6.51	6.30	4.41	5.43	5.98	5.78	6.12
Specific Conductivity (mS/cm)	--	0.845	0.222	2.693	0.443	6.990	2.053	7.119
Turbidity (NTU)	--	4.0	6.1	5.7	7.9	1.0	11.0	5.0
Dissolved Oxygen (mg/L)	--	0.00	0.50	0.36	0.42	0.00	0.00	0.38
Temperature (C)	--	26.22	23.75	24.60	21.35	26.61	23.17	23.20
ORP (mV)	--	-94.0	9.8	-53.0	-32.0	-27.0	-53.0	-76.0

Notes:

Monitoring wells AL-MW-01, -03, -04, -06, -07, -09,
were abandoned prior to removal activities and reir

Shaded values exceed 15A NCAC criteria.

Bracketed value indicates duplicate sample result.

mg/L = milligrams per liter.

U - The compound was analyzed for but not detect

J = Indicates an estimated value.

S.U. = standard units

C = Celsius

mg/L = miligrams per liter

mS/cm = millisiemens per centimeter

mV = millivolts

NTU = Nephelometric Turbidity Units

Table 3
Comparison of Arsenic Results Obtained from Competing Analytical Methods

Post-Removal Action Baseline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North Carolina

Location ID	Date Collected	Analyses			
		SW-846 6010C		SW-846 7062	
		Total Arsenic	Dissolved Arsenic	Total Arsenic	Dissolved Arsenic
MW-1	8/4/2015	0.0377	0.0395	0.0505	0.0448
MW-2	8/4/2015	0.352	0.326	0.392	0.358
MW-2D	8/4/2015	0.0325	0.0354	0.0457	0.0439
MW-3	8/4/2015	0.348	0.354	0.398	0.397
MW-3D	8/4/2015	0.280	0.290	0.381	0.363
MW-4	8/4/2015	4.73	4.75	4.86	4.72
MW-4D	8/4/2015	<0.0100	<0.0100	0.0018	0.0017
MW-5	8/4/2015	<0.0100	<0.0100	0.001 U	0.001 U
MW-6	8/4/2015	0.0146	<0.0100	0.0142	0.0138
MW-7	8/4/2015	0.0715	0.0692	0.0904	0.0873
MW-8	8/4/2015	0.0138	0.0159	0.0221	0.0168
MW-9	8/4/2015	0.202	0.167	0.262	0.173
MW-10	8/4/2015	<0.0100	<0.0100	0.0005 J	0.0005 J
MW-11	8/4/2015	<0.0100 [<0.0100]	<0.0100 [<0.0100]	0.004 [0.0038]	0.0037 [0.0043]
MW-11D	8/4/2015	<0.0100	<0.0100	0.0008 J	0.001
MW-12	8/5/2015	0.0201	0.0194	0.0247	0.0224

Notes:

U - The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

All results presented in miligrams per liter (mg/L)

Bracketed value indicates duplicate sample result.

J = Indicates an estimated value.

DRAFT

Table 4
Summary of Solid IDW Sample Analytical Results
Post-Removal Action Baseline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North Carolina

Location ID: Date Collected:	Action Levels[1]	AL-IDW-Soil-01 07/22/15	AL-IDW-Soil-02 07/22/15	AL-IDW-Soil-03 07/22/15	AL-IDW-Soil-04 07/22/15	AL-IDW-Soil-05 07/23/15
Inorganics - TCLP						
Arsenic	5	0.214 J	0.185 J	0.226 J	0.210 J	0.500 U
Barium	100	0.247 J	0.123 J	0.107 J	0.154 J	0.279 J
Cadmium	1	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Chromium	5	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Lead	5	1.35	0.434 J	0.437 J	1.32	0.500 U
Mercury	0.2	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Selenium	1	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Silver	5	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Miscellaneous						
pH (SU)	- -	NA	NA	NA	NA	12.4
Temperature	- -	NA	NA	NA	NA	22.6

Notes:

All concentrations in milligrams per liter (mg/L).

U = Not detected at the reporting limit (or method detection limit if shown).

J = Indicates an estimated value.

TCLP = Toxicity Characteristic Leaching Procedure

IDW = Investigative Derived Waste

[1]Action levels are RCRA regulatory criteria.

-- = No Regulatory Action Level

NA - data not collected.

DRAFT

Table 5
Summary of Liquid IDW Sample Analytical Results
Post-Removal Action Baseline Groundwater Monitoring Report
Former Almont Fertilizer Site, Wilmington, North Carolina

Location ID: / Date Collected:	Action Levels[1]	AL-IDW-Water-01 07/23/15	AL-IDW-Water-02 07/23/15	AL-IDW-Water-03 07/23/15	AL-IDW-Water-04 07/23/15	AL-IDW-Water-05 07/23/15
Inorganics						
Aluminum	- -	0.521	0.692	0.857	1.77	21.2
Antimony	- -	0.0122	0.0100 U	0.0100 U	0.0100 U	0.00510 J
Arsenic	5	0.694	0.0121	0.0522	0.0100 U	0.550
Barium	100	0.464	2.18	0.427	1.23	0.258
Beryllium	- -	0.00400 U	0.00400 U	0.00400 U	0.00400 U	0.00400 U
Cadmium	1	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00410
Calcium	- -	166	55.4	118	547	68.4
Chromium	5	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0606
Cobalt	- -	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Copper	- -	0.0100 U	0.0100 U	0.0170	0.0206	0.713
Iron	- -	69.3	39.1	12.5	1.04	19.9
Lead	5	0.172	0.0118	0.0139	0.0135	0.180
Magnesium	- -	48.0	15.7	17.5	0.292 J	6.05
Manganese	- -	0.765	0.322	0.189	0.0158	0.0914
Mercury	0.2	0.000519	0.000200 U	0.000200 U	0.000200 U	0.00395
Nickel	- -	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0142
Potassium	- -	122 B	88.8 B	208 B	135	54.8 B
Selenium	1	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0109
Silver	5	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Sodium	- -	253	18.4	106 B	177 B	348
Thallium	- -	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Vanadium	- -	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0546
Zinc	- -	0.586	0.329	0.446	0.0500 U	0.326
Miscellaneous						
pH	- -	6.25	6.71	8.88	12.1	9.58
Temperature	- -	22.2	22.2	22.2	22.2	22.2

Notes:

All concentrations in milligrams per liter (mg/L).

equal to the MDL and the concentration is the approximate value.

B = Compound was found in the blank and sample.

U = Not detected at the reporting limit (or method detection limit if shown).

-- = No Regulatory Action Level

IDW = Investigative Derived Waste

[1]Action levels are RCRA regulatory criteria.

Figures

REFERENCE: BASE MAP USGS 7.5 MIN. QUAD. CASTLE HAYNE, NC, 1997.

2000' 0 2000'

Approximate Scale: 1" = 2000'

Area Location

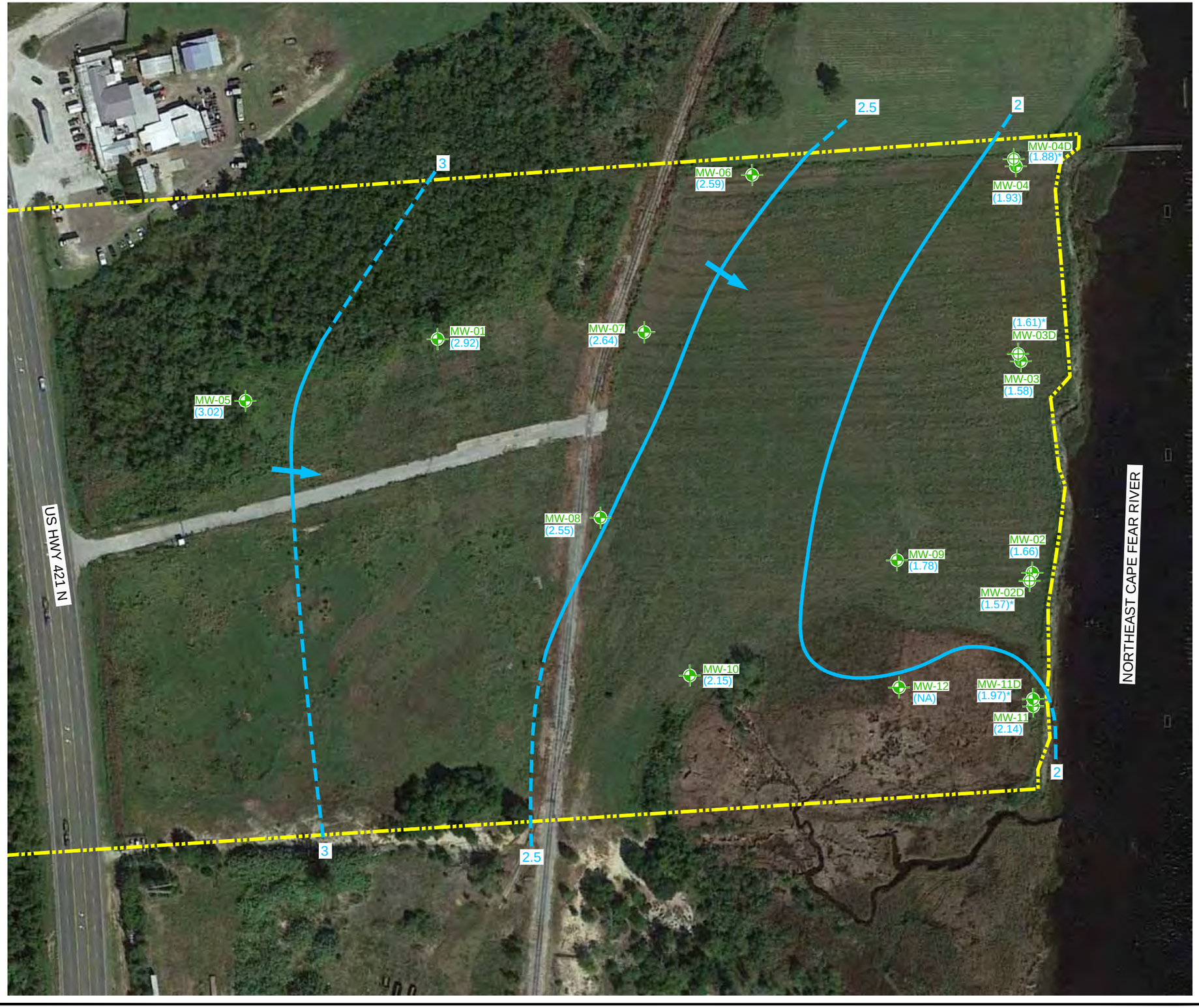
FORMER ALMONT FERTILIZER SITE
WILMINGTON, NORTH CAROLINA
POST-REMOVAL ACTION BASELINE GROUNDWATER MONITORING REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

8/24/2015 SYRACUSE, NY-EBC-IM/DV-L.POSENAUER
G:\ENVCAD\ACT\B0085757\1502\00008\DWG\PRA\BGMR-AUG15\85757N01.CDR



LEGEND:

- PROPERTY BOUNDARY
- SHALLOW PERFORMANCE MONITORING WELL LOCATION
- DEEP PERFORMANCE MONITORING WELL LOCATION
- 3.5 GROUNDWATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- (2.72) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- INFERRED GROUNDWATER FLOW DIRECTION
- * NOT USED FOR CONTOURING PURPOSES

NOTES:

1. 2014 PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO. IMAGERY DATE 10/5/2014.
2. MONITORING WELL LOCATIONS SURVEYED BY TAYLOR, WISEMAN AND TAYLOR, AUGUST 3 AND 5, 2015. BOUNDARY SURVEYED BY MURPHY GEOMATICS OF WILMINGTON, NC, DECEMBER 2008.
3. SURVEY DATA BASED ON NC STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL DATA BASED ON NADV88 (GEOID 2009).
4. WATER LEVELS OBTAINED DURING HIGH TIDE CONDITIONS. MW–12 INACCESSIBLE.

0 150' 300'
GRAPHIC SCALE

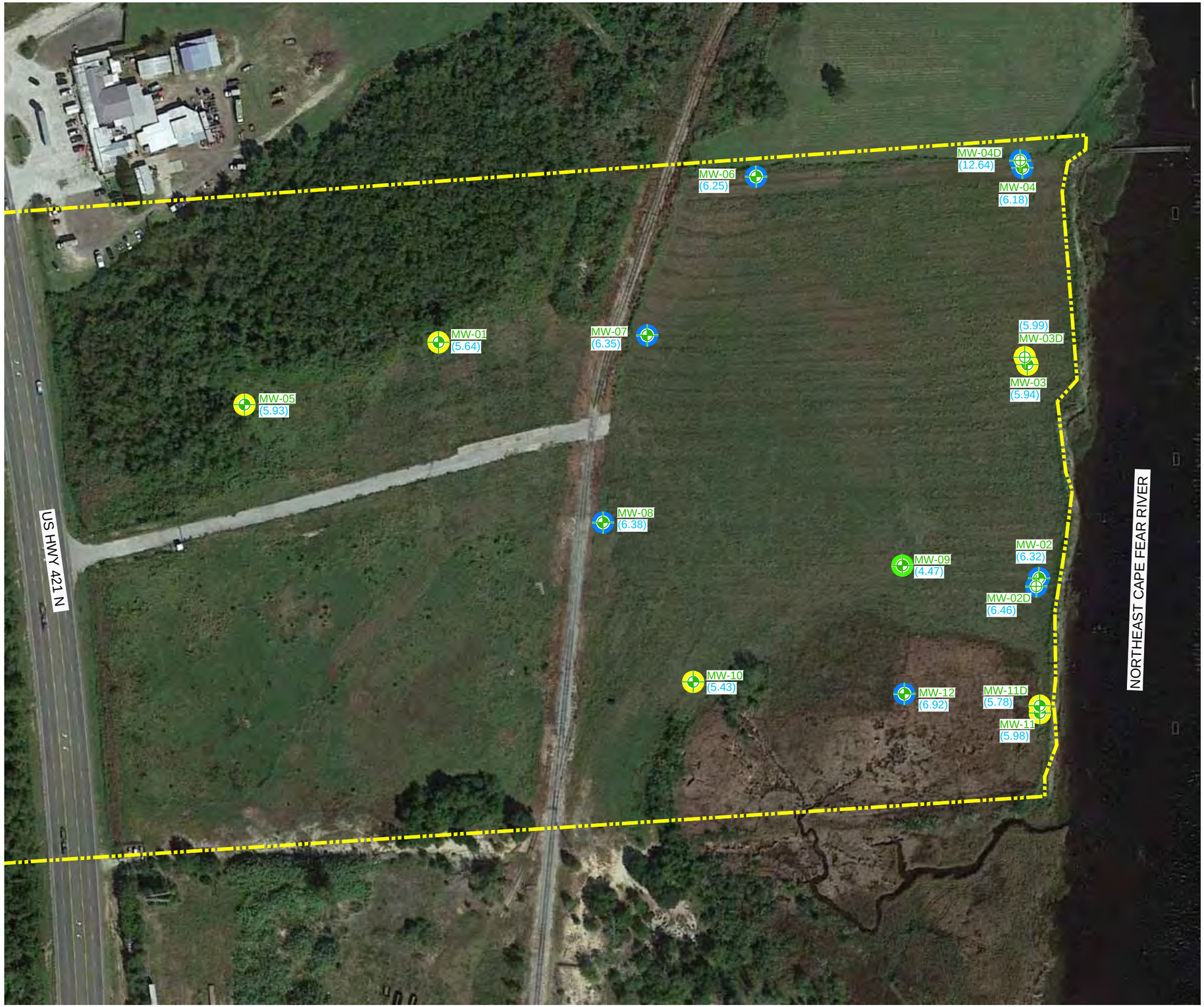
FORMER ALMONT FERTILIZER SITE
WILMINGTON, NORTH CAROLINA
POST-REMOVAL ACTION BASELINE GROUNDWATER MONITORING REPORT

POTENTIOMETRIC SURFACE MAP AUGUST 3, 2015

ARCADIS

FIGURE
2

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM: J.PURVIS LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0085757\15\02\00008\DWG\PRA\BGMR-AUG15\85757W02.dwg LAYOUT: 2 SAVED: 8/25/2015 11:48 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 8/25/2015 11:52 AM BY: POSENAUER, LISA
XREFS: 85757X00 IMAGES: Google-Earth_20141005.jpg



LEGEND:

- PROPERTY BOUNDARY
- SHALLOW PERFORMANCE MONITORING WELL LOCATION
- DEEP PERFORMANCE MONITORING WELL LOCATION
- (5.99) GROUNDWATER pH
- pH 4–5
- pH 5–6
- pH > 6

NOTES:

1. 2014 PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO. IMAGERY DATE 10/5/2014.
2. MONITORING WELL LOCATIONS SURVEYED BY TAYLOR, WISEMAN AND TAYLOR, AUGUST 3 AND 5, 2015. BOUNDARY SURVEYED BY MURPHY GEOMATICS OF WILMINGTON, NC, DECEMBER 2008.
3. pH DATA BASED ON FIELD MEASUREMENTS USING YSI 556 WATER QUALITY METER.

0 150' 300'
GRAPHIC SCALE

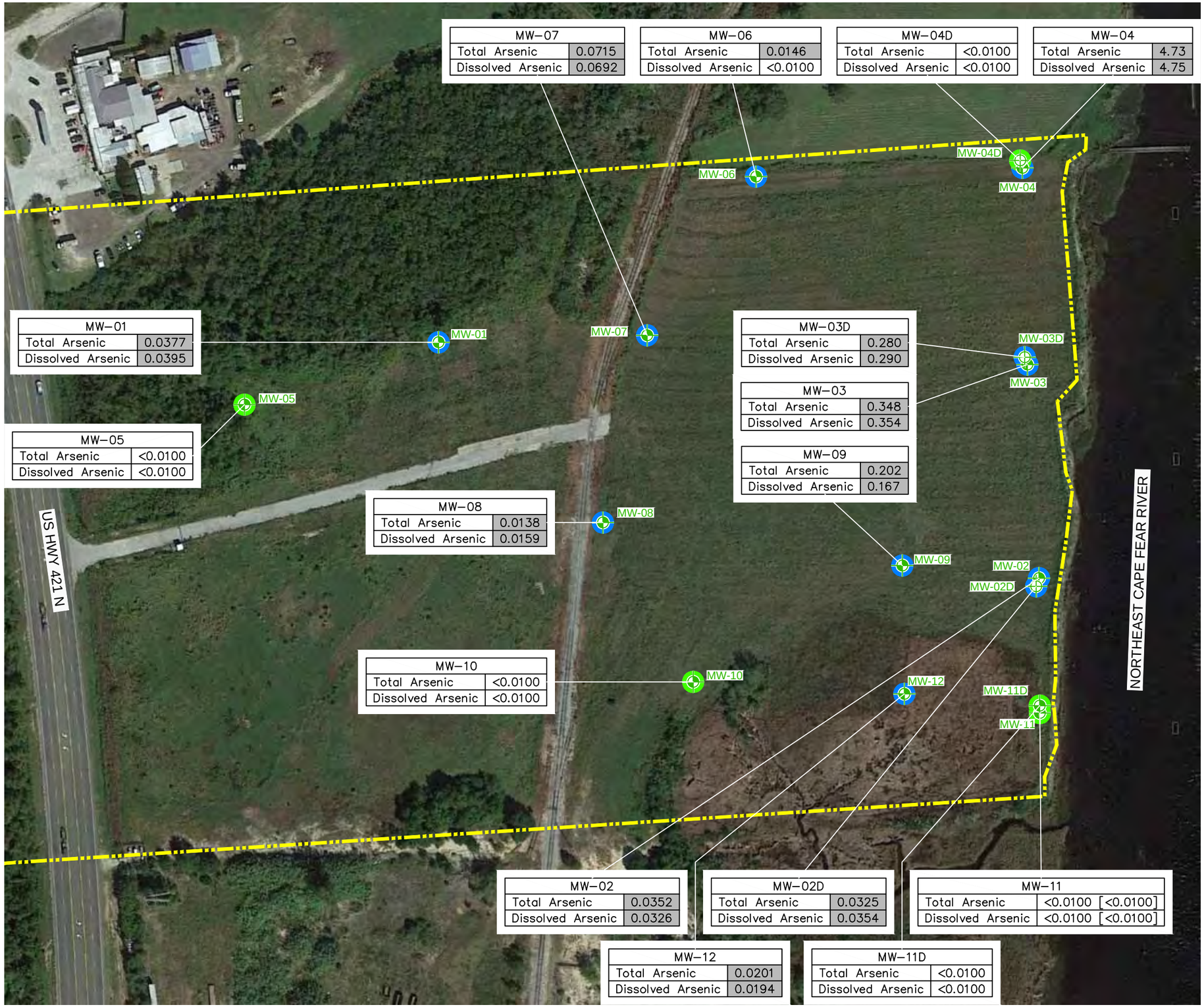
FORMER ALMONT FERTILIZER SITE
WILMINGTON, NORTH CAROLINA
POST-REMOVAL ACTION BASELINE GROUNDWATER MONITORING REPORT

GROUNDWATER pH MAP
AUGUST 2015

ARCADIS

FIGURE
3

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM: J.PURVIS LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0085757\15\02\00008\DWG\PRA\BGMR-AUG15\85757W03.dwg LAYOUT: 3 SAVED: 8/24/2015 2:56 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 8/24/2015 3:05 PM BY: POSENAUER, LISA
XREFS: 85757X00 IMAGES: Google-Earth_ 20141005.jpg



LEGEND:

- PROPERTY BOUNDARY
- SHALLOW PERFORMANCE MONITORING WELL LOCATION
- DEEP PERFORMANCE MONITORING WELL LOCATION
- BELOW APPLICABLE SCREENING CRITERIA
- ABOVE APPLICABLE SCREENING CRITERIA

NOTES:

1. 2014 PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO. IMAGERY DATE 10/5/2014.
2. MONITORING WELL LOCATIONS SURVEYED BY TAYLOR, WISEMAN AND TAYLOR, AUGUST 3 AND 5, 2015. BOUNDARY SURVEYED BY MURPHY GEOMATICS OF WILMINGTON, NC, DECEMBER 2008.
3. BRACKETED VALUES INDICATES DUPLICATE SAMPLE RESULTS.
4. APPLICABLE SCREENING CRITERIA ARE PROVIDED IN TABLE 2.
5. GROUNDWATER RESULTS ARE PRESENTED IN MILLIGRAMS PER LITER (mg/L).

0 150' 300'
GRAPHIC SCALE

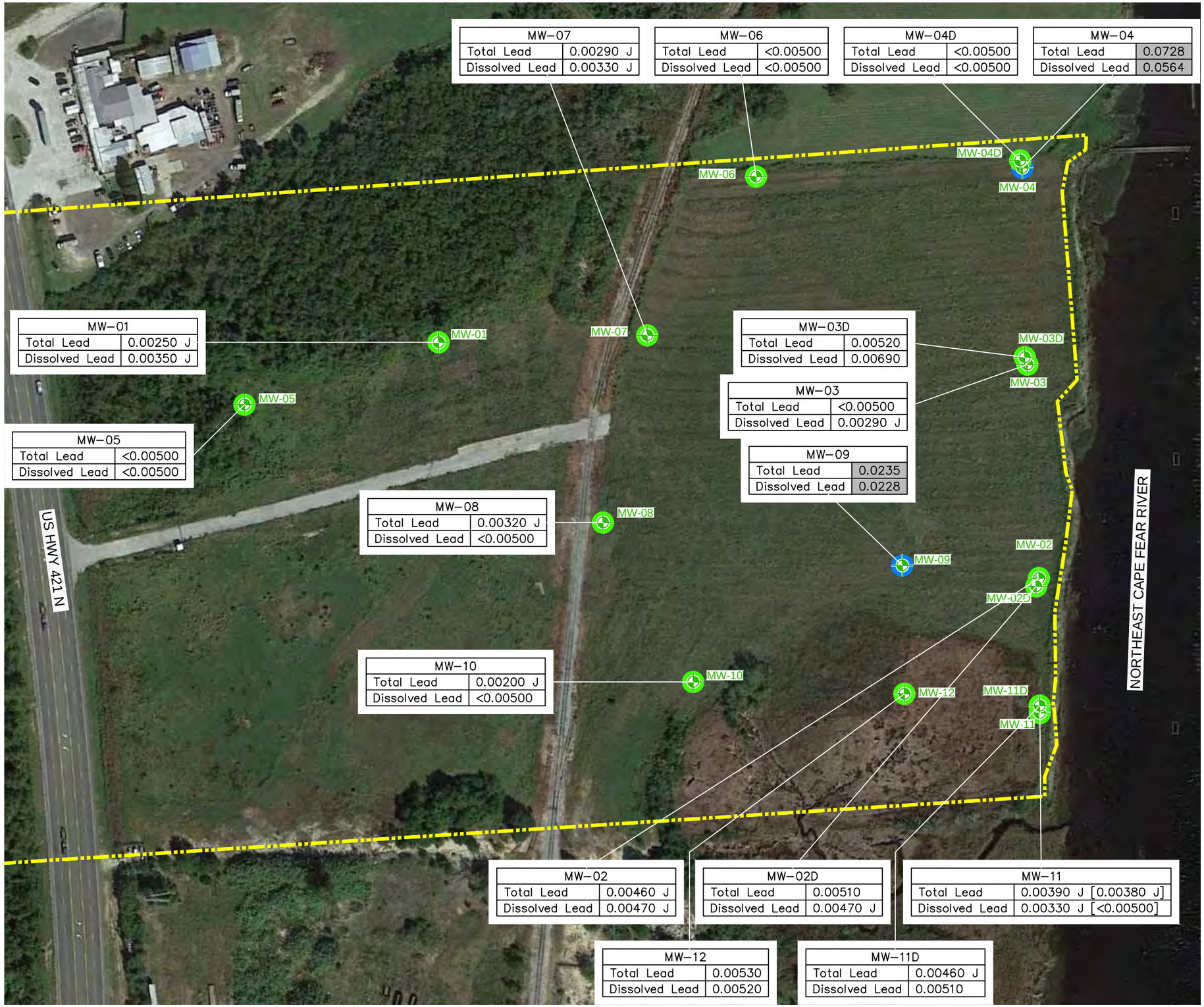
FORMER ALMONT FERTILIZER SITE
WILMINGTON, NORTH CAROLINA
POST-REMOVAL ACTION BASELINE GROUNDWATER MONITORING REPORT

ARSENIC IN GROUNDWATER AUGUST 2015

ARCADIS

FIGURE
4

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM: J.PURVIS LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0085757\15\02\00008\DWG\PRA\BGMR-AUG15\85757C04.dwg LAYOUT: 4 SAVED: 8/24/2015 3:00 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 8/24/2015 3:04 PM BY: POSENAUER, LISA
XREFS: 85757X00 IMAGES: Google-Earth_20141005.jpg



LEGEND:

- PROPERTY BOUNDARY
- SHALLOW PERFORMANCE MONITORING WELL LOCATION
- DEEP PERFORMANCE MONITORING WELL LOCATION
- BELOW APPLICABLE SCREENING CRITERIA
- ABOVE APPLICABLE SCREENING CRITERIA

NOTES:

1. 2014 PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO. IMAGERY DATE 10/5/2014.
2. MONITORING WELL LOCATIONS SURVEYED BY TAYLOR, WISEMAN AND TAYLOR, AUGUST 3 AND 5, 2015. BOUNDARY SURVEYED BY MURPHY GEOMATICS OF WILMINGTON, NC, DECEMBER 2008.
3. BRACKETED VALUES INDICATES DUPLICATE SAMPLE RESULTS.
4. APPLICABLE SCREENING CRITERIA ARE PROVIDED IN TABLE 2.
5. GROUNDWATER RESULTS ARE PRESENTED IN MILLIGRAMS PER LITER (mg/L).

0 150' 300'
GRAPHIC SCALE

FORMER ALMONT FERTILIZER SITE
WILMINGTON, NORTH CAROLINA
POST-REMOVAL ACTION BASELINE GROUNDWATER MONITORING REPORT

LEAD IN GROUNDWATER AUGUST 2015

ARCADIS

FIGURE
5

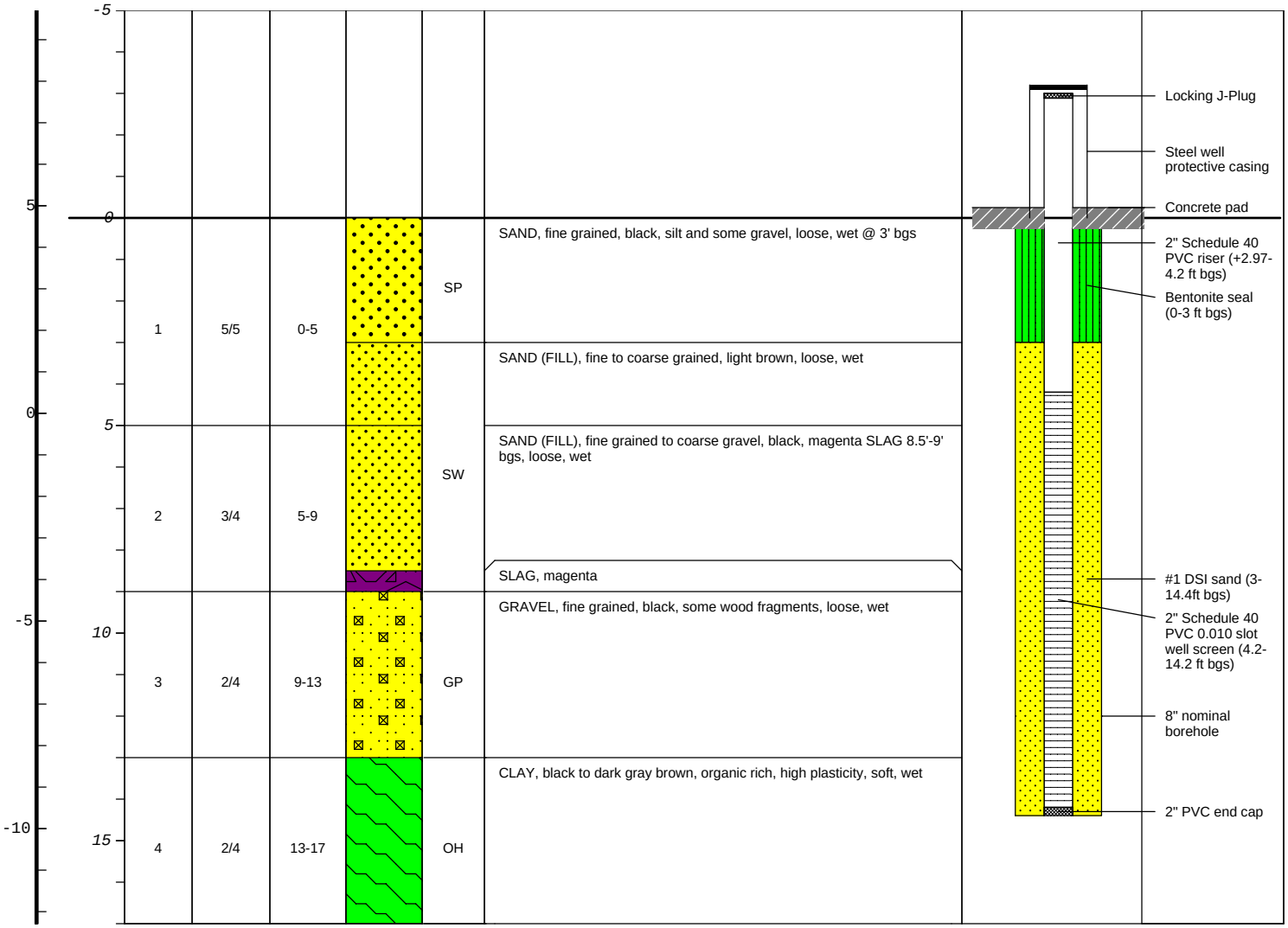
CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM: J.PURVIS LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0085757\15\02\00008\DWG\PRA\BGMR-AUG15\85757C05.dwg LAYOUT: 5 SAVED: 8/24/2015 3:02 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 8/24/2015 3:04 PM BY: POSENAUER, LISA
XREFS: 85757X00 IMAGES: Google-Earth_20141005.jpg

Attachment A

Well Construction Details and Water Well Records

Date Start/Finish: 07-15-15/07-15-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 190681.12 **Easting:** 2316523.20 **Casing Elevation:** 7.68 ft amsl **Surface Elevation:** 4.71 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-02** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
		1	5/5	0-5		SP	SAND, fine grained, black, silt and some gravel, loose, wet @ 3' bgs	
							SAND (FILL), fine to coarse grained, light brown, loose, wet	
		2	3/4	5-9		SW	SAND (FILL), fine grained to coarse gravel, black, magenta SLAG 8.5'-9' bgs, loose, wet	
							SLAG, magenta	
		3	2/4	9-13		GP	GRAVEL, fine grained, black, some wood fragments, loose, wet	
		4	2/4	13-17		OH	CLAY, black to dark gray brown, organic rich, high plasticity, soft, wet	



ARCADIS
Infrastructure · Water · Environment · Buildings

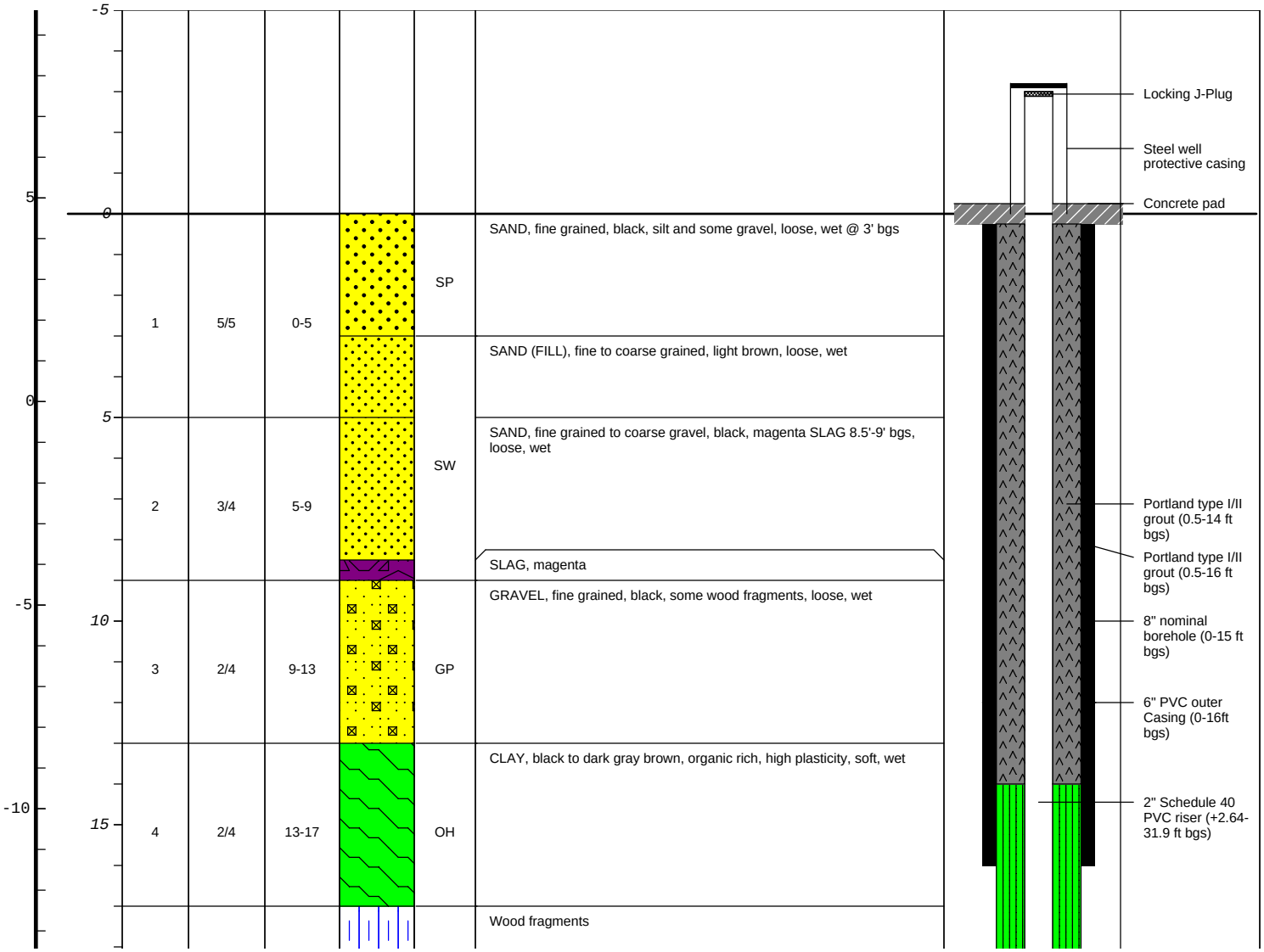
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-15-15/07-21-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850/Ingersoll Rand 300	**Northing:** 190693.66 **Easting:** 2316527.31 **Casing Elevation:** 7.25 ft amsl **Surface Elevation:** 4.61 ft amsl **Borehole Depth:** 37.5 ft bgs **Geologist:** Brian Lovgren/Dan Rhodes	**Well ID:** **AL-MW-02D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
		1	5/5	0-5		SP	SAND, fine grained, black, silt and some gravel, loose, wet @ 3' bgs	
							SAND (FILL), fine to coarse grained, light brown, loose, wet	
		2	3/4	5-9		SW	SAND, fine grained to coarse gravel, black, magenta SLAG 8.5'-9' bgs, loose, wet	
							SLAG, magenta	
		3	2/4	9-13		GP	GRAVEL, fine grained, black, some wood fragments, loose, wet	
		4	2/4	13-17		OH	CLAY, black to dark gray brown, organic rich, high plasticity, soft, wet	
							Wood fragments	



ARCADIS
Infrastructure · Water · Environment · Buildings

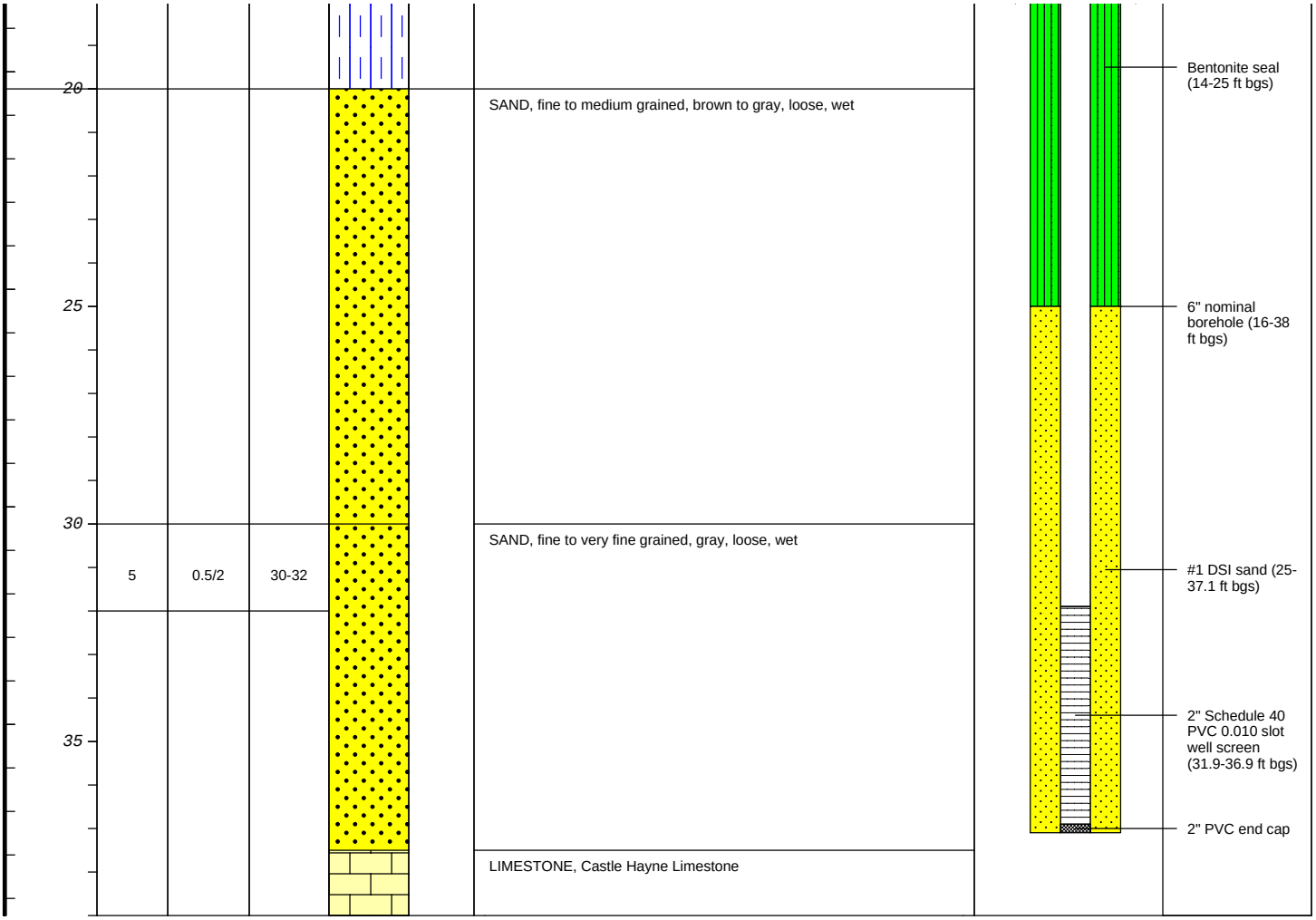
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-15-15/07-21-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850/Ingersoll Rand 300	**Northing:** 190693.66 **Easting:** 2316527.31 **Casing Elevation:** 7.25 ft amsl **Surface Elevation:** 4.61 ft amsl **Borehole Depth:** 37.5 ft bgs **Geologist:** Brian Lovgren/Dan Rhodes	**Well ID:** **AL-MW-02D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
-15	20						SAND, fine to medium grained, brown to gray, loose, wet	Bentonite seal (14-25 ft bgs)
-20	25							6" nominal borehole (16-38 ft bgs)
-25	30	5	0.5/2	30-32			SAND, fine to very fine grained, gray, loose, wet	#1 DSI sand (25-37.1 ft bgs)
-30	35						LIMESTONE, Castle Hayne Limestone	2" Schedule 40 PVC 0.010 slot well screen (31.9-36.9 ft bgs) 2" PVC end cap



Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

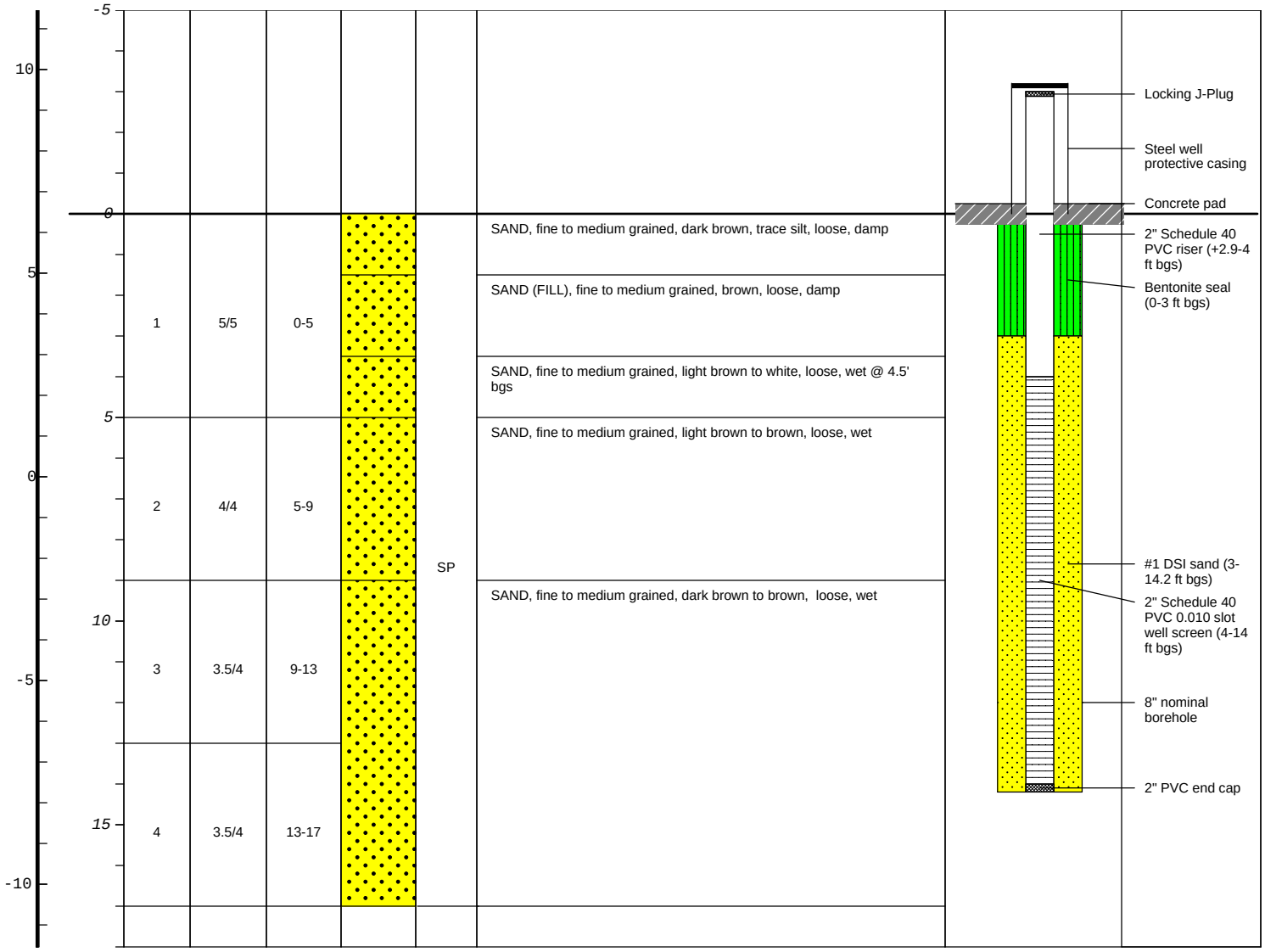
Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

ARCADIS
Infrastructure · Water · Environment · Buildings

Date Start/Finish: 07-09-15/07-09-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** Direct Push/HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 191014.94 **Easting:** 2316510.01 **Casing Elevation:** 9.36 ft amsl **Surface Elevation:** 6.46 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-03** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0	1	5/5	0-5		SP	SAND, fine to medium grained, dark brown, trace silt, loose, damp	
							SAND (FILL), fine to medium grained, brown, loose, damp	
							SAND, fine to medium grained, light brown to white, loose, wet @ 4.5' bgs	
	5	2	4/4	5-9			SAND, fine to medium grained, light brown to brown, loose, wet	
	10	3	3.5/4	9-13			SAND, fine to medium grained, dark brown to brown, loose, wet	
	15	4	3.5/4	13-17				



Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

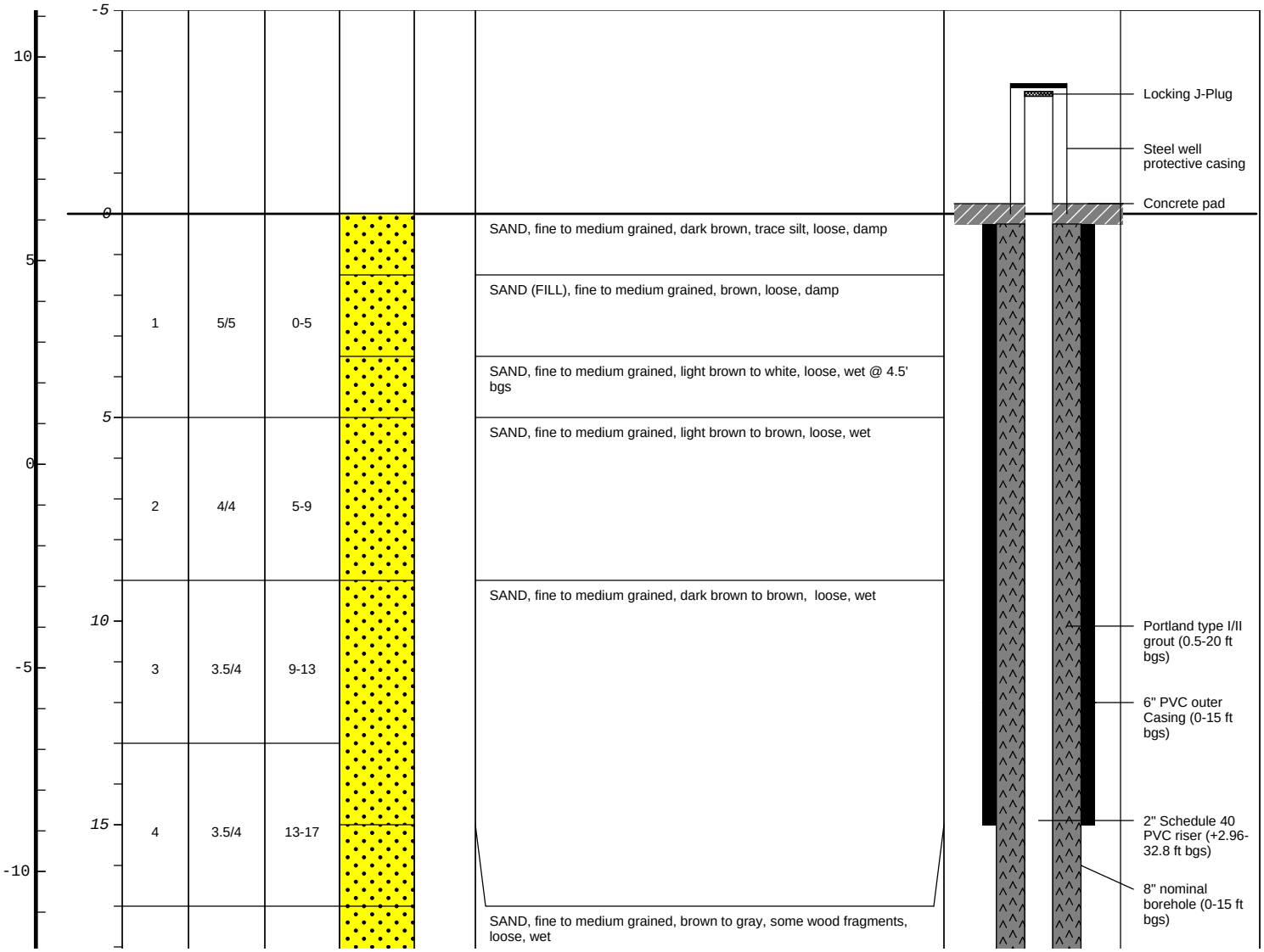
Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

ARCADIS
Infrastructure · Water · Environment · Buildings

Date Start/Finish: 07-09-15/07-20-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850/Ingersoll Rand 300	**Northing:** 191026.15 **Easting:** 2316505.74 **Casing Elevation:** 9.11 ft amsl **Surface Elevation:** 6.15 ft amsl **Borehole Depth:** 38 ft bgs **Geologist:** Brian Lovgren/Dan Rhodes	**Well ID:** **AL-MW-03D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0	1	5/5	0-5			SAND, fine to medium grained, dark brown, trace silt, loose, damp SAND (FILL), fine to medium grained, brown, loose, damp SAND, fine to medium grained, light brown to white, loose, wet @ 4.5' bgs	Locking J-Plug Steel well protective casing Concrete pad
	5	2	4/4	5-9			SAND, fine to medium grained, light brown to brown, loose, wet	
	10	3	3.5/4	9-13			SAND, fine to medium grained, dark brown to brown, loose, wet	Portland type I/II grout (0.5-20 ft bgs) 6" PVC outer Casing (0-15 ft bgs)
	15	4	3.5/4	13-17			SAND, fine to medium grained, brown to gray, some wood fragments, loose, wet	2" Schedule 40 PVC riser (+2.96-32.8 ft bgs) 8" nominal borehole (0-15 ft bgs)



ARCADIS
Infrastructure · Water · Environment · Buildings

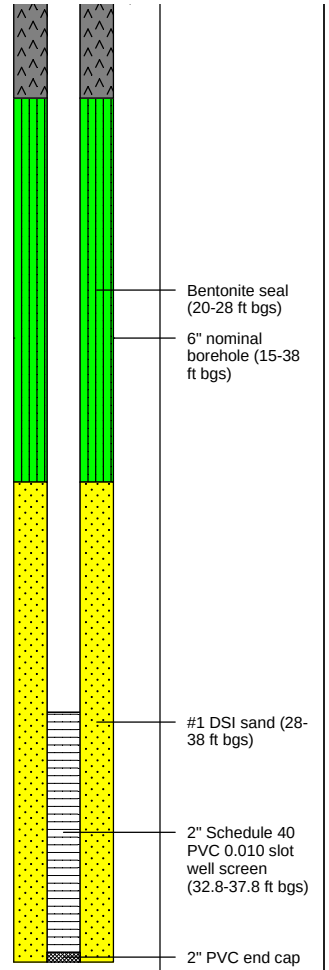
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-09-15/07-20-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850/Ingersoll Rand 300	**Northing:** 191026.15 **Easting:** 2316505.74 **Casing Elevation:** 9.11 ft amsl **Surface Elevation:** 6.15 ft amsl **Borehole Depth:** 38 ft bgs **Geologist:** Brian Lovgren/Dan Rhodes	**Well ID:** **AL-MW-03D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina		

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	20					SP		
-15								
	25							
-20								
	30						SAND, fine to very fine grained, gray, loose, wet	
-25		5	1/2	30-32				
	35							
-30								
							LIMESTONE	



ARCADIS
Infrastructure · Water · Environment · Buildings

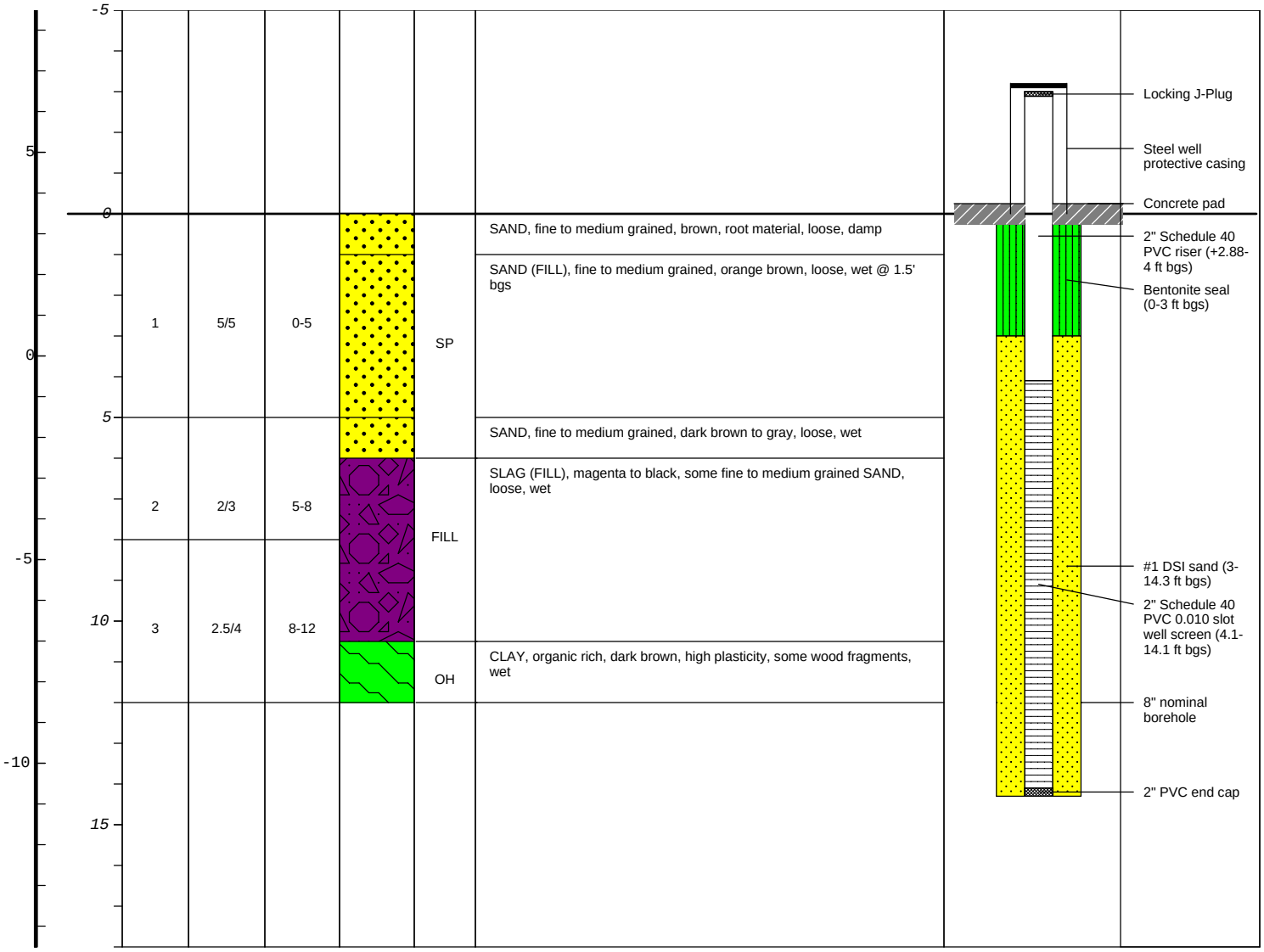
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-08-15/07-08-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** Direct Push/HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 191310.38 **Easting:** 2316502.64 **Casing Elevation:** 3.49 ft amsl **Surface Elevation:** 6.37 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-04** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
		1	5/5	0-5		SP	SAND, fine to medium grained, brown, root material, loose, damp SAND (FILL), fine to medium grained, orange brown, loose, wet @ 1.5' bgs	
		2	2/3	5-8		FILL	SAND, fine to medium grained, dark brown to gray, loose, wet SLAG (FILL), magenta to black, some fine to medium grained SAND, loose, wet	
		3	2.5/4	8-12		OH	CLAY, organic rich, dark brown, high plasticity, some wood fragments, wet	



ARCADIS
Infrastructure · Water · Environment · Buildings

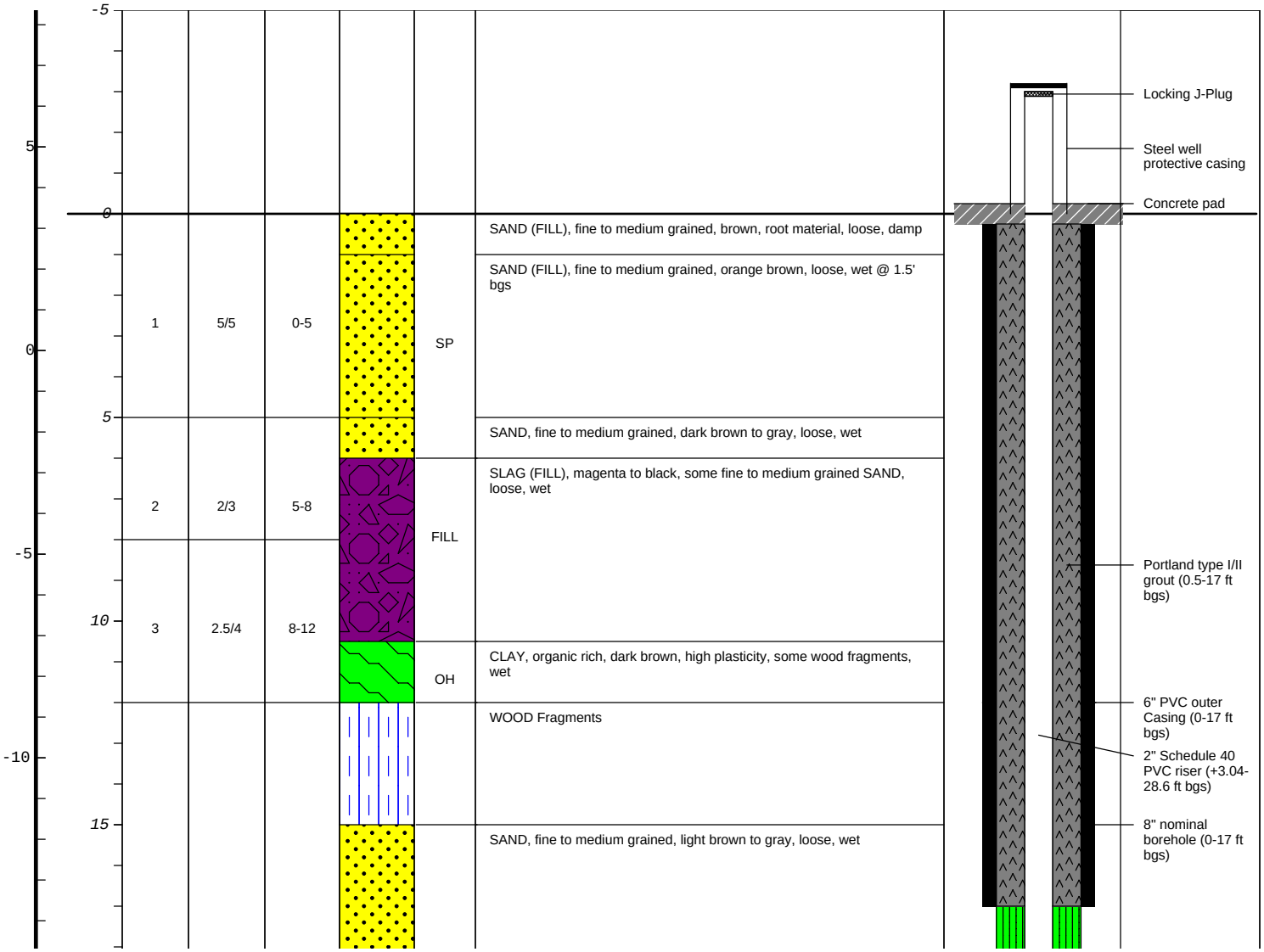
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-08-15/07-17-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850	**Northing:** 191321.60 **Easting:** 2316499.42 **Casing Elevation:** 6.40 ft amsl **Surface Elevation:** 3.36 ft amsl **Borehole Depth:** 34 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-04D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0						SAND (FILL), fine to medium grained, brown, root material, loose, damp	Locking J-Plug Steel well protective casing Concrete pad
		1	5/5	0-5		SP	SAND (FILL), fine to medium grained, orange brown, loose, wet @ 1.5' bgs	
	5						SAND, fine to medium grained, dark brown to gray, loose, wet	
		2	2/3	5-8		FILL	SLAG (FILL), magenta to black, some fine to medium grained SAND, loose, wet	Portland type I/II grout (0.5-17 ft bgs)
	10	3	2.5/4	8-12		OH	CLAY, organic rich, dark brown, high plasticity, some wood fragments, wet	
							WOOD Fragments	6" PVC outer Casing (0-17 ft bgs) 2" Schedule 40 PVC riser (+3.04-28.6 ft bgs)
	15						SAND, fine to medium grained, light brown to gray, loose, wet	8" nominal borehole (0-17 ft bgs)



ARCADIS
Infrastructure · Water · Environment · Buildings

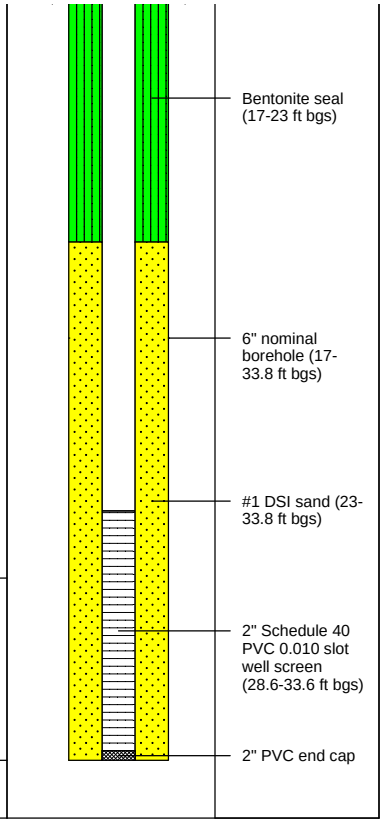
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-08-15/07-17-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850	**Northing:** 191321.60 **Easting:** 2316499.42 **Casing Elevation:** 6.40 ft amsl **Surface Elevation:** 3.36 ft amsl **Borehole Depth:** 34 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-04D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
-15								
	20							
-20						SP		
	25							
-25								
	30	4	1/2	30-32			SAND, fine to very fine grained, gray, loose, wet	
-30							LIMESTONE	
	35							



ARCADIS
Infrastructure · Water · Environment · Buildings

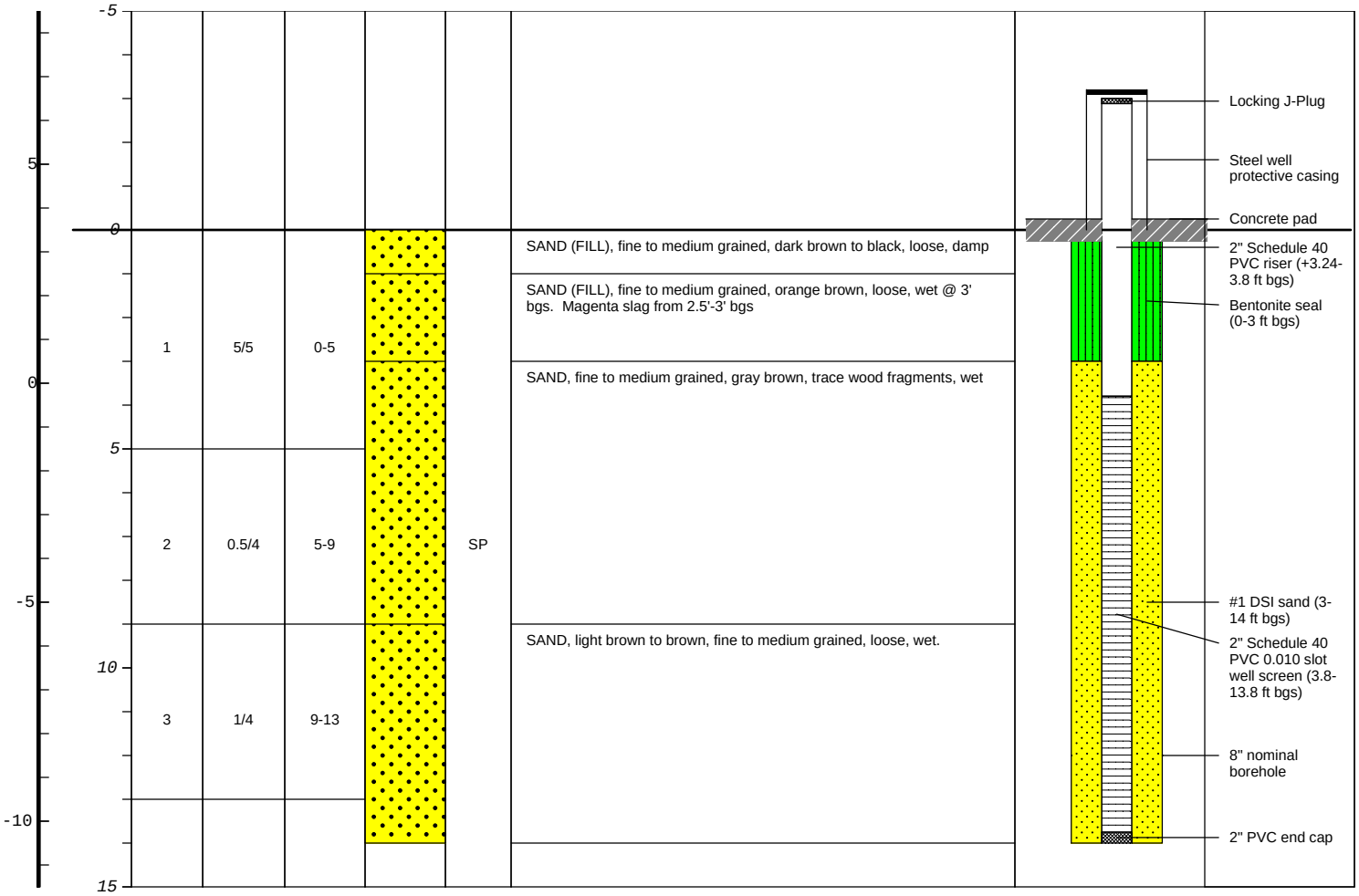
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-07-15/07-07-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** Direct Push/HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 191297.57 **Easting:** 2316101.70 **Casing Elevation:** 6.74 ft amsl **Surface Elevation:** 3.50 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-06** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0						SAND (FILL), fine to medium grained, dark brown to black, loose, damp	
							SAND (FILL), fine to medium grained, orange brown, loose, wet @ 3' bgs. Magenta slag from 2.5'-3' bgs	
		1	5/5	0-5				
							SAND, fine to medium grained, gray brown, trace wood fragments, wet	
	5	2	0.5/4	5-9		SP		
							SAND, light brown to brown, fine to medium grained, loose, wet.	
	10	3	1/4	9-13				
	15							



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

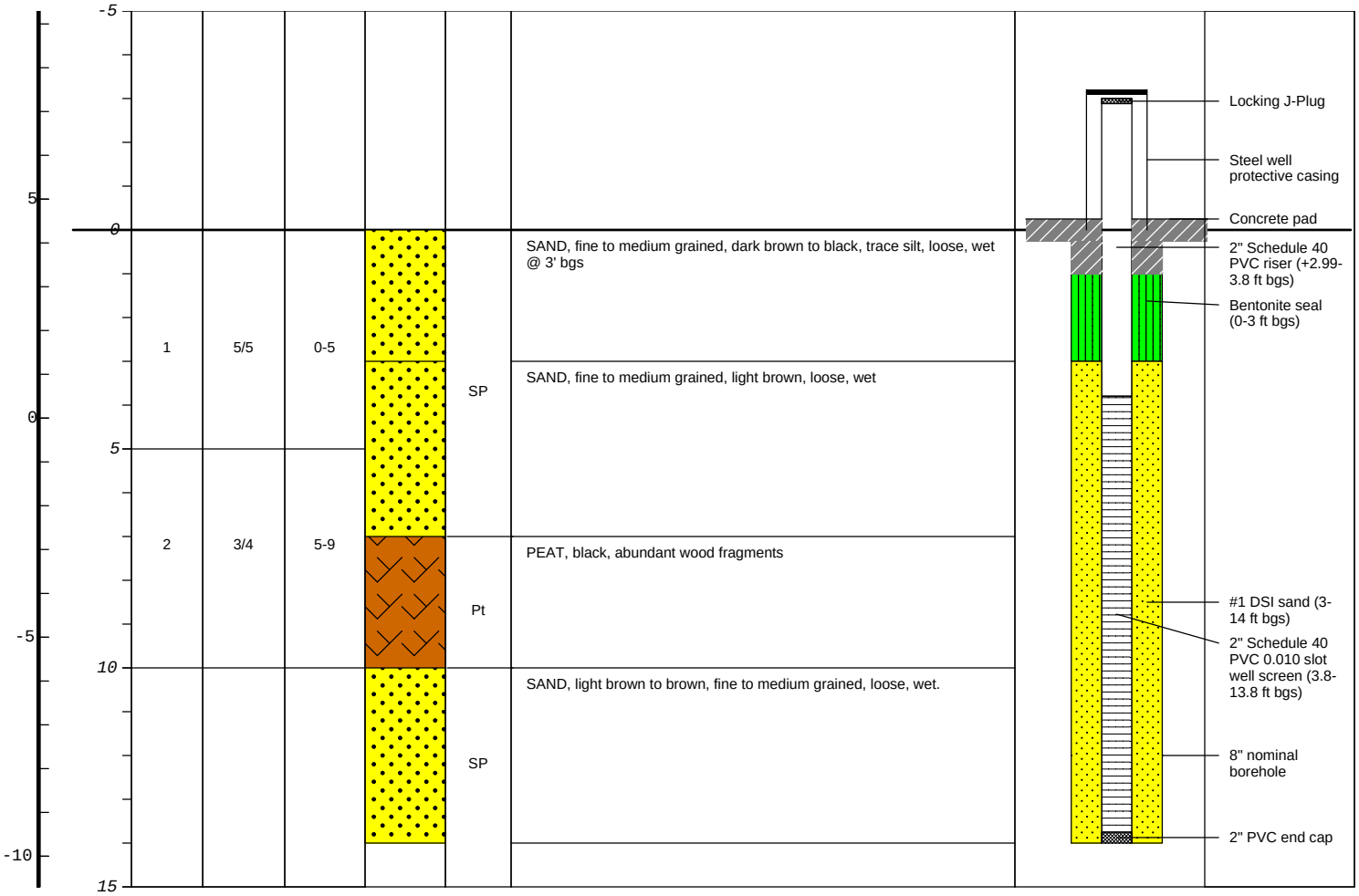
Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Project: B0085757.1502 Template:
Data File:AL-MW-06 Date: 8/31/2015 Created/Edited by: D.Rhodes

Date Start/Finish: 07-06-15/07-07-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** Direct Push/HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 191058.76 **Easting:** 2315938.09 **Casing Elevation:** 7.29 ft amsl **Surface Elevation:** 4.30 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-07** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0	1	5/5	0-5		SP	SAND, fine to medium grained, dark brown to black, trace silt, loose, wet @ 3' bgs	
	5	2	3/4	5-9		Pt	SAND, fine to medium grained, light brown, loose, wet	
	10					SP	PEAT, black, abundant wood fragments	
	15						SAND, light brown to brown, fine to medium grained, loose, wet.	



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

DPT Refusal @ 8.0 ft bgs

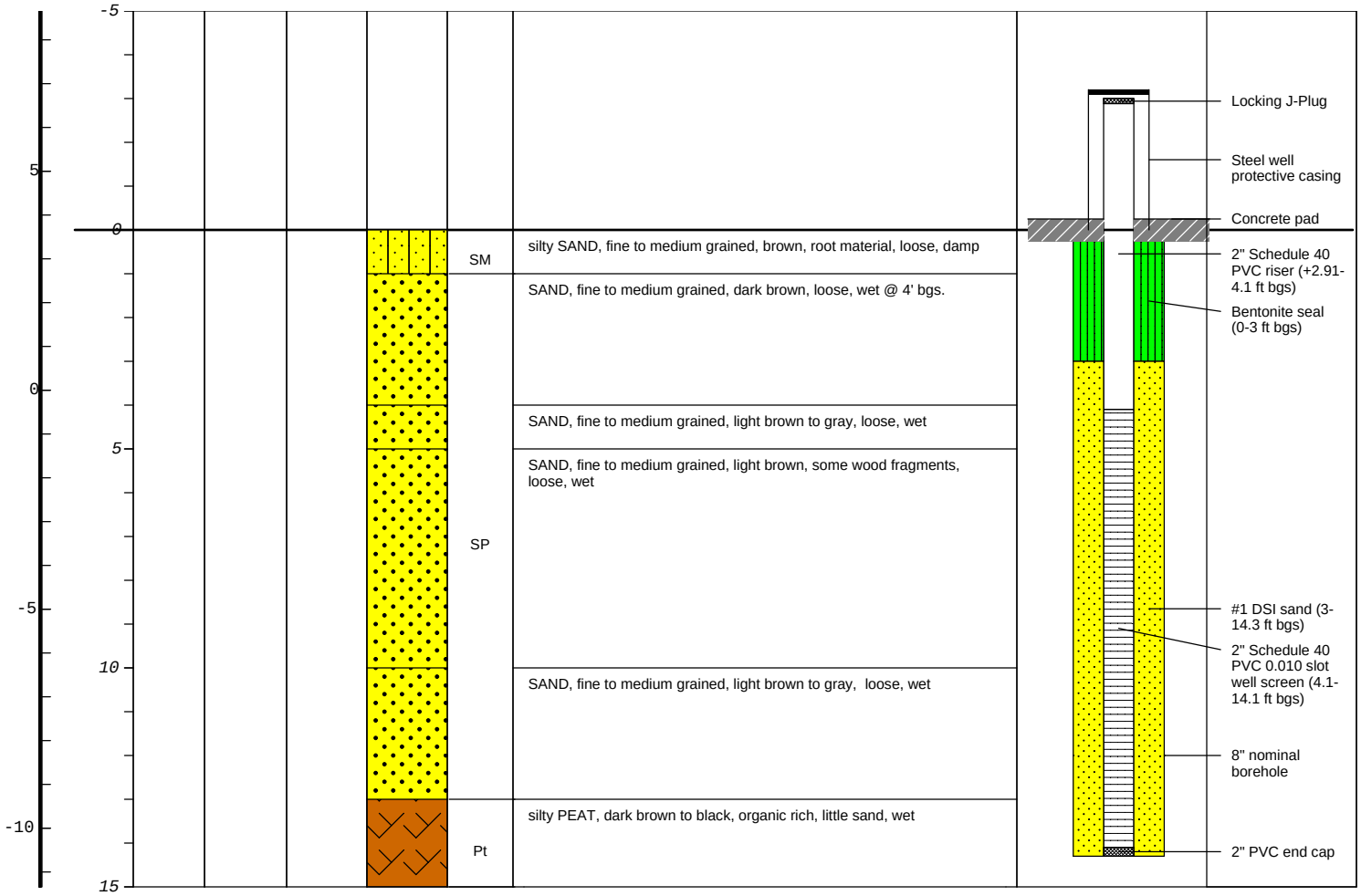
Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Project: B0085757.1502 Template:
Data File:AL-MW-07 Date: 8/31/2015 Created/Edited by: D.Rhodes

Date Start/Finish: 07-09-15/07-09-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 190712.86 **Easting:** 2316321.59 **Casing Elevation:** 6.57 ft amsl **Surface Elevation:** 3.66 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-09** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0					SM	silty SAND, fine to medium grained, brown, root material, loose, damp	
						SP	SAND, fine to medium grained, dark brown, loose, wet @ 4' bgs.	
							SAND, fine to medium grained, light brown to gray, loose, wet	
							SAND, fine to medium grained, light brown, some wood fragments, loose, wet	
							SAND, fine to medium grained, light brown to gray, loose, wet	
						Pt	silty PEAT, dark brown to black, organic rich, little sand, wet	



Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

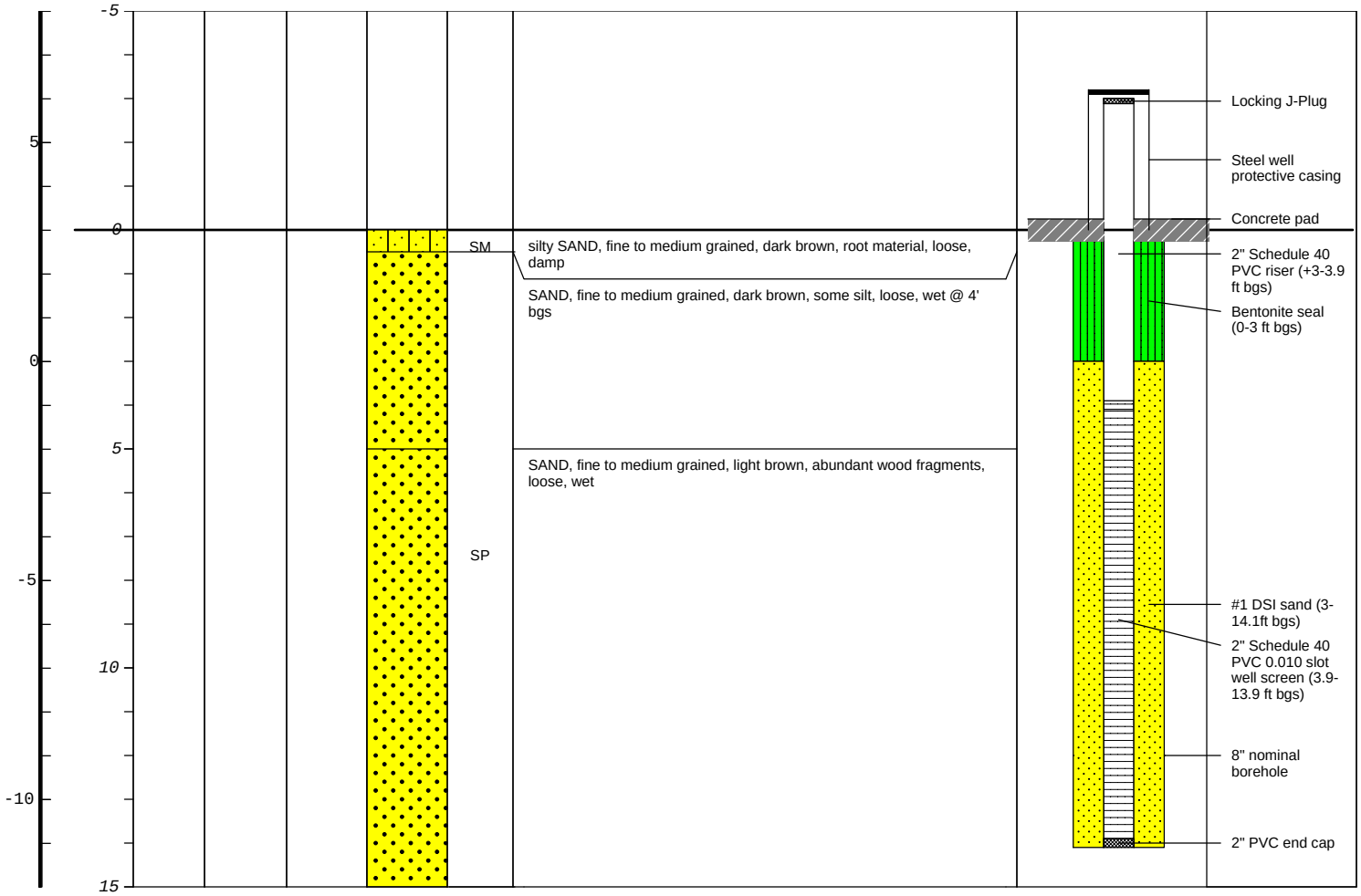
Lithology based on AL-MW-09 well install conducted in 2011.

ARCADIS
Infrastructure · Water · Environment · Buildings

Project: B0085757.1502 Template:
Data File:AL-MW-09 Date: 8/31/2015 Created/Edited by: D.Rhodes

Date Start/Finish: 07-10-15/07-10-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 190537.96 **Easting:** 2316007.40 **Casing Elevation:** 6.01 ft amsl **Surface Elevation:** 3.01 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-10** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction



Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

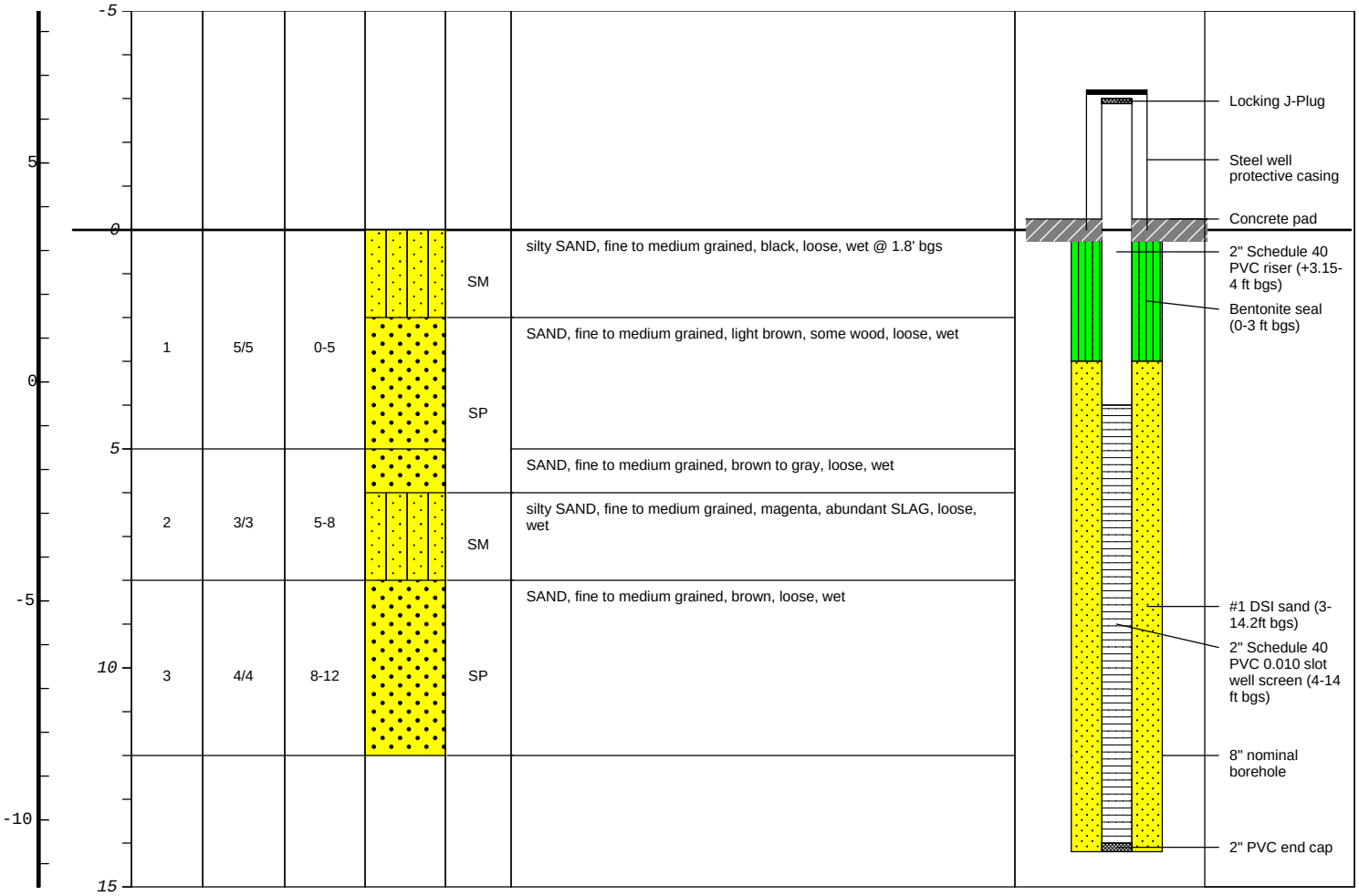
Lithology based on AL-MW-10 well installation conducted in 2011.

ARCADIS
Infrastructure · Water · Environment · Buildings

Project: B0085757.1502 Template:
Data File:AL-MW-10 Date: 8/31/2015 Created/Edited by: D.Rhodes

Date Start/Finish: 07-14-15/07-14-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA **Sampler Size:** 3" x 4' Macrocore **Auger Size:** 4.25" I.D. **Rig Type:** CME 850	**Northing:** 190491.04 **Easting:** 2316528.48 **Casing Elevation:** 6.62 ft amsl **Surface Elevation:** 3.47 ft amsl **Borehole Depth:** 14 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-11** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0							
		1	5/5	0-5		SM	silty SAND, fine to medium grained, black, loose, wet @ 1.8' bgs	
						SP	SAND, fine to medium grained, light brown, some wood, loose, wet	
	5						SAND, fine to medium grained, brown to gray, loose, wet	
		2	3/3	5-8		SM	silty SAND, fine to medium grained, magenta, abundant SLAG, loose, wet	
		3	4/4	8-12		SP	SAND, fine to medium grained, brown, loose, wet	
	15							



ARCADIS
Infrastructure · Water · Environment · Buildings

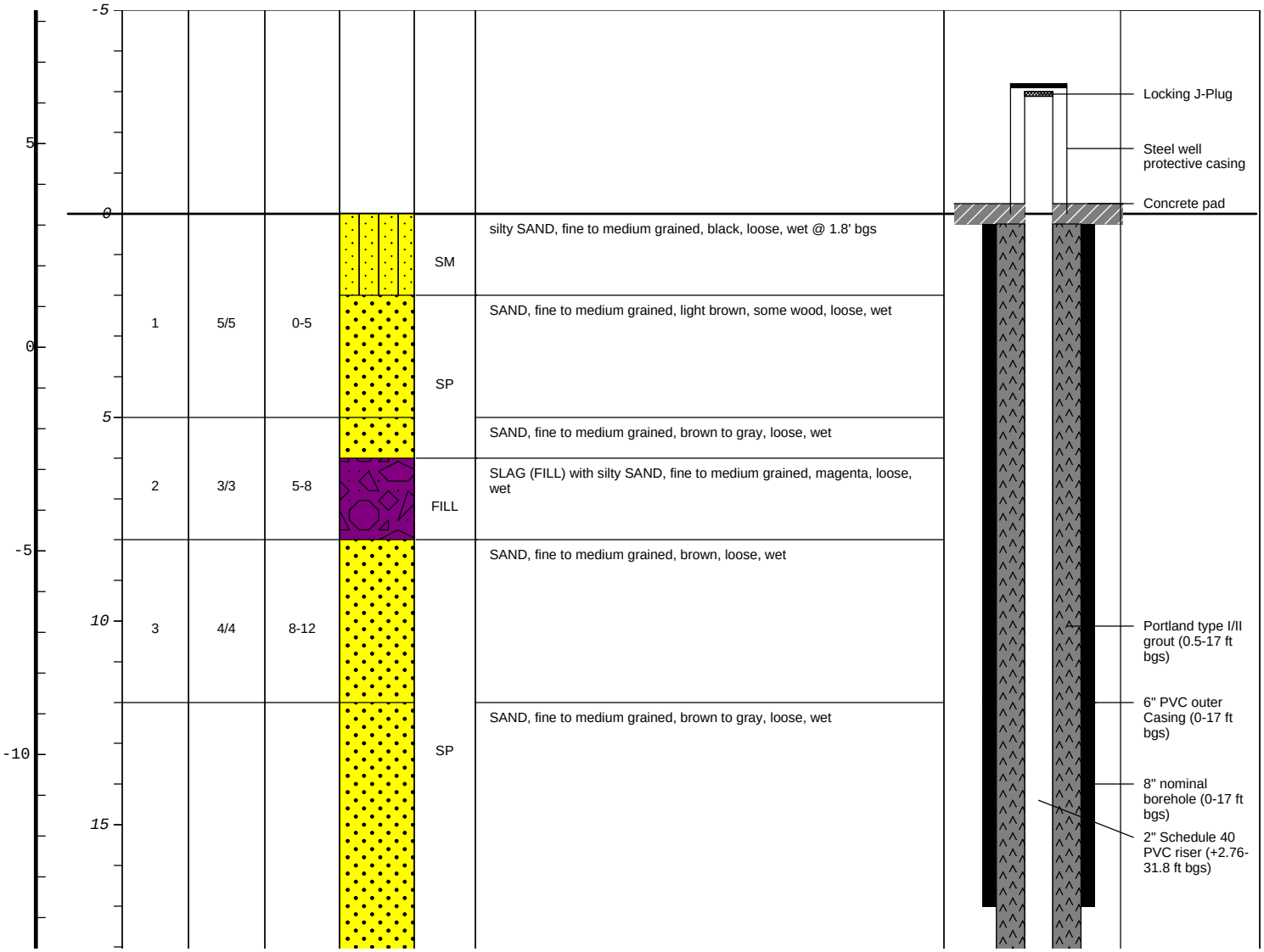
Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-14-15/07-16-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850	**Northing:** 190501.68 **Easting:** 2316528.38 **Casing Elevation:** 6.04 ft amsl **Surface Elevation:** 3.28ft amsl **Borehole Depth:** 37 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-11D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina	

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
	0					SM	silty SAND, fine to medium grained, black, loose, wet @ 1.8' bgs	
		1	5/5	0-5		SP	SAND, fine to medium grained, light brown, some wood, loose, wet	
	5						SAND, fine to medium grained, brown to gray, loose, wet	
		2	3/3	5-8		FILL	SLAG (FILL) with silty SAND, fine to medium grained, magenta, loose, wet	
	10	3	4/4	8-12		SP	SAND, fine to medium grained, brown, loose, wet	
	15					SP	SAND, fine to medium grained, brown to gray, loose, wet	



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

Date Start/Finish: 07-14-15/07-16-15 **Drilling Company:** Parratt Wolff **Driller's Name:** Paul Poyner **Drilling Method:** HSA/Mud Rotary **Sampler Size:** 3" x 4' Macrocore/2' X 2" SS **Auger Size:** 4.25" I.D./5.875" Roller Bit **Rig Type:** CME 850	**Northing:** 190501.68 **Easting:** 2316528.38 **Casing Elevation:** 6.04 ft amsl **Surface Elevation:** 3.28ft amsl **Borehole Depth:** 37 ft bgs **Geologist:** Brian Lovgren	**Well ID:** **AL-MW-11D** **Client:** ExxonMobil Environmental Services Company **Location:** VCC - Almont Wilmington, North Carolina

Elevation (NAVD 88)	Depth (ft. bgs)	Sample Run Number	Recovery (feet)	Sample/Int/Type	Geologic Column	USCS Code	Stratigraphic Description	Well Construction
-15								
-20	20						WOOD fragments	
-25	25						SAND, fine to very fine grained, gray, loose, wet	Bentonite seal (20-28 ft bgs) 6" nominal borehole (17-37 ft bgs)
-30	30	4	0.5/2	30-32		SP		
	35							#1 DSI sand (28-37 ft bgs) 2" Schedule 40 PVC 0.010 slot well screen (31.8-36.8 ft bgs) 2" PVC end cap
							LIMESTONE	

Remarks: ft bgs = feet below ground surface; ft amsl = feet above mean sea level; I.D. = inner diameter; HSA = Hollow Stem Auger; SS = Split Spoon

Survey Datum; Vertical - NAVD 88; Horizontal - NAD 83

Hand Augered to 5 ft bgs for utility clearance. Well key # 27676.

ARCADIS
Infrastructure · Water · Environment · Buildings

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/15/15 **Well ID#** AL-MW-02D

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑ **Permanent** or ☐ **Temporary**

7. Is this a repair to an existing well: ☐ **Yes** or ☑ **No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 37 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8/6 **(in.)**

12. Well construction method: Auger/Fluid Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	37 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	16 ft.	6 in.	Sch. 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	32 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
32 ft.	37 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	14 ft.	Cement	Tremied
14 ft.	25 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
25 ft.	37 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	37 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor — Date: 8/3/15

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/14/15 **Well ID#** AL-MW-02

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form.*

9. Total well depth below land surface: 14.5 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.5 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.5 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.5 ft.	14.5 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.5 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.5 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

8/3/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/9/15 **Well ID#** AL-MW-03

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 14.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.0 ft.	14.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367-H) 8/3/15

Signature of Certified Well Contractor — Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/9/15 **Well ID#** AL-MW-3D

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 38 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8/6 **(in.)**

12. Well construction method: Auger/Fluid Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	38 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	15 ft.	6 in.	Sch. 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	33 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
33 ft.	38 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	20 ft.	Cement	Tremied
20 ft.	28 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
28 ft.	38 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	38 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367A) 8/3/15

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/18/15 **Well ID#** AL-MW-04

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑ **Permanent** or ☐ **Temporary**

7. Is this a repair to an existing well: ☐ **Yes** or ☑ **No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form.*

9. Total well depth below land surface: 14.5 **(ft.)**

For multiple wells list all depths (within one example: 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.5 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.5 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.5 ft.	14.5 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.5 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.5 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(33674) 8/3/15

Signature of Certified Well Contractor — Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0108 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/8/15 **Well ID#** AL-MW-4D

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 36 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8/6 **(in.)**

12. Well construction method: Auger/Fluid Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	36 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	17 ft.	6 in.	Sch. 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	31 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
31 ft.	36 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	24 ft.	Cement	Tremied
24 ft.	29 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
29 ft.	36 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	36 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(33671) 8/3/15

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/7/15 **Well ID#** AL-MW-06

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 14.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.0 ft.	14.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367-H)

Signature of Certified Well Contractor

8/3/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/6/15 **Well ID#** AL-MW-07

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 14.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.0 ft.	14.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367A) 8/3/15

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/10/15 **Well ID#** AL-MW-09

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 15.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	15.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	5.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5.0 ft.	15.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	15.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	15.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

[signature] (3367-A) 8/3/15

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0108 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/10/15 **Well ID#** AL-MW-10

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑ **Permanent** or ☐ **Temporary**

7. Is this a repair to an existing well: ☐ **Yes** or ☑ **No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 14.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	14.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4.0 ft.	14.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	14.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	14.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(33674) 8/3/15

Signature of Certified Well Contractor — Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0108 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/14/15 **Well ID#** AL-MW-11

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form.*

9. Total well depth below land surface: 15.0 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8 **(in.)**

12. Well construction method: Auger

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	15.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	5.0 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5.0 ft.	15.0 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Cement	Tremied
1 ft.	3 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3 ft.	15.0 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	15.0 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367-A) 8/3/15

Signature of Certified Well Contractor Date

By signing this form I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Paul Poyner

Well Contractor Name

4023-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7/14/15 **Well ID#** AL-MW-11D

5a. Well Location:

VCC Almont Site

Facility/Owner Name

Facility ID# (if applicable)

2466 Francis Peter Hwy. Wilmington, NC 28401

Physical Address, City, and Zip

New Hanover County

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

34.270529 N -77.953093 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** or ☑**No**

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form

8. Number of wells constructed: 1

*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form*

9. Total well depth below land surface: 37 **(ft.)**

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 7 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 8/6 **(in.)**

12. Well construction method: Auger/Fluid Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY

14. WATER ZONES

FROM	TO	DESCRIPTION
7 ft.	37 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	16 ft.	6 in.	Sch. 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	32 ft.	2 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
32 ft.	37 ft.	2 in.	0.010"	Sch. 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	22 ft.	Cement	Tremied
22 ft.	28 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
28 ft.	37 ft.	Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, rock type, grain size, etc.)
0 ft.	7 ft.	Brown, Moist, Soft, Sand with some Silt
7 ft.	37 ft.	Brown, Wet, Soft, Sand with some Silt
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

(3367-A) 8/3/15

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

Appendix B

Field Documentation

Wilmington, NC 8-3-15
Almont UCC / XOM
DTW Round

Monday August 3, 2015
Weather: Cloudy 85°F - Showers

0700 Bus off to Storage to pick up equipment from Storage.

0730 Left Apex for the site.
0950 Arrived at the site and went over health and safety issues with
TWT: Rex Bohn
Ryan Smith

1045 Robert Prigge of Arcadis on site. Went over Health and safety issues and filled out Form A Short Service Worker.

1135 Begin full DTW Round of all on site wells:

Time	Well ID	DTW	DTB
1145	AL-MW-05	3.52	16.17
1148	AL-MW-01	4.28	16.62
1153	AL-MW-08	2.55	13.10
1157	AL-MW-10	3.86	17.19
1205	AL-MW-09	4.79	17.40

Wilmington, NC 8-3-15
Almont UCC / XOM
DTW Round

Time	Well ID	DTW	DTB	
1210	AL-MW-11D	4.07	39.90	
1211	AL-MW-11	4.48	17.55	
1215	AL-MW-02D	5.68	38.94	
1216	AL-MW-02	6.02	17.47	
1218	AL-MW-03	7.78	17.25	
1220	AL-MW-03D	7.50	40.75	
1225	AL-MW-04D	4.52	36.86	
1226	AL-MW-04	4.44	17.40	
1228	AL-MW-06	4.15	17.12	
1235	AL-MW-07	4.65	16.95	
1240	AL-MW-12	N/A	N/A	High Tide

1245 Robert Prigge to Lunch.
1300 Back on site. Heavy Rain at this time.
1500 After discussing heavy rain and lightning with Dan Peterman, BWL Robert Prigge and TWT off site. TWT will return on Wednesday
1510 Back at hotel.

Wilmington, NC 8-4-15
Almont UCC / Xom
Calibration of YSI 556

Tuesday August 4, 2015
Weather: Cloudy Showers 85°F
0615 Left the hotel for site..
0630 Arrived on site, Begin Health & Safety Review..

Begin Calibration of YSI 556

	Was Ready Unit # 026545	Adjusted to
pH=	7.15	7.00
pH=	10.15	10.00
pH=	3.95	N/A
Spcond=	1.275 ms/cm	1.413 ms/cm
ORP=	257 mV	240 mV
DO=	128% Sat	100% Sat

	Was Ready Unit # 167	Adjust to
pH=	10.45	10.00
pH=	6.85	7.00
pH=	3.77	4.00
SpCond =	1.238 ms/cm	1.413 ms/cm
ORP=	198 mV	240 mV
DO=	101% Sat	N/A

Wilmington, NC 8-4-15
Almont UCC / Xom
AL-MW-04D

Check Hach Turbimeters to:
10 ntu
20 ntu
100 ntu
800 ntu
Both checked out.

0720 Set up on AL-MW-04D
Static DTW = 5.10
DTB = 36.86
0730 Placed new poly tubing to 34.5' below TOC.
0735 Begin pumping AL-MW-04D @ 150 ml/min using peristaltic pump

Time	Temp °C	Spcond ms/cm	DO mg/L	pH	ORP mV	Turb	FR	DTW
0745	23.51	2.962	0.54	12.25	-8	9	125	[illegible]
0750	23.53	2.985	0.36	12.31	-14	19	125	5.25
0755	23.78	3.005	0.32	12.43	-37	26	125	5.25
0800	23.31	3.138	0.20	12.51	-95	5	125	5.25
0805	23.44	3.175	0.16	12.56	[illegible]	[illegible]	[illegible]	5.25
0810	23.46	3.222	0.15	12.59	-73	5	125	5.25
0815	23.35	3.268	0.13	12.64	-78	5	125	5.25

Wilmington, NC 8-4-15
Almont vec / Xom
AL-MW-04D

0820 Collected AL-MW-04D and filled the following containers:
1-250ml. HNO3 As Pb (6020)
1-250ml HNO3 As (7062)
* 1-250ml HNO3 Diss As Pb (6020)
* 1-250 HNO3 Diss As (7062)

* Field filtered using 0.45 micron in line filter.
Removed 1.5 gallons of water prior to sampling.
Characteristics: Clear & colorless

Set up on AL-MW-03D
Static DTW = 7.50
DTB = 40.75

0840 Placed new poly tubing to 38.0' bTOC
0848 Begin pumping AL-MW-03D @ 150ml/min using peristaltic pump

Time	Temp (oC)	Spc Cond (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turb (ntu)	FR	DTW
0855	22.84	4.884	0.54	6.14	121	10	150	7.50
0900	22.95	4.913	0.33	6.07	133	16	150	7.50
0905	22.40	5.180	0.15	6.01	143	5	150	7.50

Wilmington, NC 8-4-15
Almont vec / Xom
AL-MW-03D

AL-MW-03D

Time	Temp (oC)	Spc Cond (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turb (ntu)	FR	DTW
0910	22.54	5.285	0.11	5.99	149	4	150	7.50
0915	22.59	5.325	0.10	5.99	155	4	150	7.50
0920	22.82	5.375	0.11	5.99	167	4	150	7.50
0925	22.91	5.375	0.11	5.99	169	4	150	7.50
0930	23.00	5.383	0.10	5.99	173	4	150	7.50

0930 Collected AL-MW-03D and filled:
1-250ml HNO3 As Pb (6020)
1-250ml HNO3 As (7062)
* 1-250ml HNO3 Diss As, Pb (6020)
* 1-250ml HNO3 Diss As (7062)
* Field filtered using 0.45 micron filter.
Removed 1.5 gallons of water prior to collection.
Characteristics Clear & Colorless

0945 Set upon AL-MW-02D
Static DTW = 6.50
DTB = 38.94

0950 Placed new poly tubing to 37.0' bTOC
0951 Begin pumping AL-MW-02D @ 150ml/min using peristaltic pump.

Wilmington, NC 8-4-15
Almont VCC / Xom
AL-MW-02D

AL-MW-02D

Time	Temp °C	Spc Cond mS/cm	DO mg/L	pH	ORP mV	Turb ntu	FR	DTW
0955	22.59	1.534	0.10	9.36	141	34	175	6.55
1000	22.35	1.517	0.00	8.28	3.6	12	175	6.50
1005	22.37	1.515	0.00	7.98	-62	10	175	6.50
1010	22.42	1.505	0.00	7.35	-109	13	175	6.50
1015	22.30	1.463	0.00	6.80	-104	7	175	6.50
1020	22.28	1.458	0.00	6.74	-101	7	175	6.50
1025	22.39	1.450	0.00	6.67	-93	6	175	6.50
1030	22.30	1.430	0.00	6.57	-89	7	175	6.50
1035	22.28	1.406	0.00	6.46	-86	7	175	6.50

1040 Collected AL-MW-02D and filled:
1-250ml HNO_3 As, Pb 6020
1-250ml HNO_3 As 7062
* 1-250ml HNO_3 Diss As Pb (6020)
* 1-250ml HNO_3 Diss As (7062)

* Field filtered using 0.45 micron in-line filter, Removed 3.0 gallons of water
Characteristics: clear & colorless

Wilmington, NC 8-4-15
Almont VCC / Xom
AL-MW-11D MS/MSD

1055 Set upon on AL-MW-11D
Static DTW = 4.70
DTB = 39.90

1100 Placed new poly tubing to 38.0' below TOC
1104 Begin pumping AL-MW-11D @ 150ml/m using peristaltic pump.

Time	Temp °C	Spc Cond mS/cm	DO mg/L	pH	ORP mV	Turb ntu	FR	DTW
1110	23.42	2.037	0.03	5.89	-39	29	150	4.80
1115	23.64	2.052	0.00	5.83	-46	16	150	4.80
1120	23.43	2.056	0.00	5.81	-47	10	150	4.80
1125	23.35	2.063	0.00	5.79	-48	19	150	4.80
1130	23.28	2.062	0.00	5.77	-49	13	150	4.80
1135	23.17	2.053	0.00	5.78	-53	11	150	4.80

1140 Collected AL-MW-11D and Matrix Spike
1140 AL-MW-11D (MS) and Matrix Spike Dup
1140 AL-MW-11D (MSD) and filled:
3-250ml HNO_3 As Pb Total 6020
3-250ml HNO_3 As (7062)
* 3-250ml HNO_3 As Pb Diss 6020
* 3-250ml HNO_3 Diss As (7062)
* Field filtered using 0.45 micron in-line filter
Removed 1.5 gallons of water

Wilmington, NC 8-4-15
Almont UCC/Xom
AL-MW-11/AL-QAQC-DUP-01

Characteristics: Clear + colorless

1210 Set up on AL-MW-11
Static DTW = 4.60
DTB = 17.55

1211 Placed new poly tubing to 12.0' below TOC

1214 Begin pumping AL-MW-11 @ 200ml/min using peristaltic pump.

Time	°C Temp	mS/cm SpecCond	mg/L DO	pH	mV ORP	ntu Turb	FR	DTW
1220	26.80	6.993	0.11	5.98	-24	2	200	4.60
1225	26.70	6.982	0.00	5.99	-22	1	200	4.60
1230	26.73	6.984	0.00	5.99	-26	2	200	4.45
1235	26.64	6.985	0.00	5.99	-26	2	200	4.40
1240	26.56	6.987	0.00	5.98	-26	1	200	4.40
1245	26.61	6.990	0.00	5.98	-27	1	200	4.40

1250 Collected AL-MW-11 and Blind Duplicate NIR AL-QAQC-DUP-01 and filled the following:

2-250ml HNO_3 As, Pb 6010
2-250ml HNO_3 As 7062
* 2-250ml HNO_3 Diss As, Pb (6010)
* 2-250ml HNO_3 Diss As (7062)

Wilmington, NC 8-4-15
Almont UCC/Xom
AL-MW-06

* Field Filtered using 0.45 micron
Removed 2.0 gallons of water prior to collection.
Characteristics: Clear + Colorless

1310 Set up on AL-MW-06
Static DTW = 3.70
DTB = 17.12

1328 Placed new poly tubing to 12.0' below TOC

1330 Begin pumping AL-MW-06 @ 200ml/min using peristaltic pump

Time	°C Temp	mS/cm SpecCond	mg/L DO	pH	mV ORP	ntu Turb	FR	DTW
1335	[illegible]	0.378	0.02	6.22	-57	9	200	3.75
1340	24.40	0.375	0.00	6.23	-50	7	200	3.75
1345	24.30	0.375	0.00	6.24	-50	5	200	3.75
1350	24.31	0.376	0.00	6.25	-52	4	200	3.75
1355	24.35	0.376	0.00	6.24	-60	2	200	3.75
1400	24.38	0.376	0.00	6.25	-60	1	200	3.75

1405 Collected AL-MW-06 and filled:

1-250ml HNO_3 As Pb (6010)
1-250ml HNO_3 As (7062)
1-250ml HNO_3 Diss As Pb (6010)
1-250ml HNO_3 Diss As (7062)

Wilmington, NC 8-4-15
Almont VCC/XOM
AL-MW-07

Removed 2.0 gallons of water prior to collecting sample.
Characteristics: Clear & Colorless

1410 Set up on AL-MW-07.
Static DTW = 4.02
DTB = 16.95

1415 Placed new poly tubing to 12.0' below TOC
1418 Begin pumping AL-MW-07 @ 200ml/min using peristaltic pump.

Time	Temp (oC)	Spcond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	FR	DTW
1425	26.01	0.830	0.00	6.53	-74	15	200	4.20
1430	26.24	0.845	0.00	6.51	-84	5	200	4.20
1435	26.27	0.843	0.00	6.51	-84	5	200	4.20
1440	26.26	0.843	0.00	6.51	-90	3	200	4.20
1445	26.27	0.843	0.00	6.51	-94	4	200	4.20
1450	26.22	0.845	0.00	6.51	-94	4	200	4.20

1455 Collected AL-MW-07 and filled:
1-250ml HNO_3 As Pb 6010
1-250ml HNO_3 As (7062)
* 1-250ml HNO_3 Diss As Pb 6010
* 1-250ml HNO_3 Diss As (7062)

Wilmington, NC 8-4-15
Almont VCC/XOM
AL-MW-05

Removed 2.0 gallons of water prior to collection.
Characteristics: Clear Yellow Tint.

1515 Set up on AL-MW-05
Static DTW = 3.20
DTB = 16.17

Placed new poly tubing to 12.0' below TOC
1525 Begin pumping AL-MW-05 @ 200ml/min using peristaltic pump.

Time	Temp (oC)	Spcond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	FR	DTW
1530	22.92	0.207	0.00	5.90	-22	3	200	3.20
1535	22.84	0.210	0.00	5.94	-29	2	200	3.20
1540	22.90	0.213	0.00	5.96	-34	2	200	3.20
1545	22.84	0.213	0.00	5.95	-37	2	200	3.20
1550	23.14	0.216	0.00	5.94	-38	2	200	3.20
1555	22.95	0.217	0.00	5.93	-43	2	200	3.20

1600 Collected AL-MW-05 and filled the follow
1-250ml HNO_3 As Pb (6010)
1-250ml HNO_3 As (7062)
* 1-250ml HNO_3 Diss As, Pb (6010)
* 1-250ml HNO_3 Diss As (7062)

Wilmington, NC 8-4-15
Almont UCC / XOM
AL-QAQC-EB-01

* Field filtered using 0.45 micron filter
Removed 2.0 gallons prior to collecting sample
Characteristics:

1630 Collected AL-QAQC-EB-01 by pumping laboratory supplied DI water through new tubing and filtered:
1-250ml HNO_3 As Pb 6010
1-250ml HNO_3 As (7062)
* 1-250ml HNO_3 Diss As Pb 6010
* 1-250ml HNO_3 Diss As 7062

* Field filtered using 0.45 micron filter in line.

1700 After clean up Bwl and Robert Riggs offsite.
1730 Bwl back at hotel.

Wilmington, NC 8-5-15
Almont UCC / XOM
Calibration of YSI

Wednesday August 5, 2015
Weather: Clear Hot 95°F
0600 Left the hotel for site.
0625 Arrived on site. Wintover Healthand Safety issues for the day:

Begin Calibration of YSI 556

Was Reading	Adjusted to
pH= 3.95	N/A
pH= 9.95	N/A
pH= 7.09	N/A
Spcond= 1.433 mS/cm	N/A
ORP= 237 mV	N/A
DO= 85% Sat	100% Sat

Checked the Hach Turbidimeter to
10 ntu
20 ntu
100 ntu
800 ntu
} Checked out.

Wilmington, NC 8-5-15
Almont VCC / XOM
AL-MW-12

0720 Set up on AL-MW-12
Static DTW = 2.77
DTB = 16.65

0722 Placed new poly tubing to 17.0 below TOC.
Begin pumping AL-MW-12 @ 150 ml/min using peristaltic pump.

Time	Temp (°C)	Spcond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (ntu)	FR	DTW
0730	22.69	7.244	0.68	6.05	-31	16	175	2.84
0735	22.75	7.156	0.77	6.07	-55	23	175	2.84
0740	23.11	7.153	0.68	6.10	-67	13	175	2.84
0745	22.95	7.131	0.52	6.11	-70	11	175	2.84
0750	22.9	7.102	0.40	6.12	-73	10	175	2.86
0755	23.10	7.109	0.43	6.12	-75	8	175	2.86
0800	23.20	7.119	0.38	6.12	-76	5	175	2.86

0805 Collected AL-MW-12 and filled
1-250 ml HNO_3 As Pb (6010)
1-250 ml HNO_3 As (7062)
* 1-250 ml HNO_3 Diss As, Pb (6010)
* 1-250 ml HNO_3 Diss As (7062)

* Field filtered using 0.45 micron filter.

Wilmington, NC 8-5-15
Almont VCC / XOM

Removed 2.0 gallons of water.
Characteristics: Clear + Colorless.

Begin packup of samples for shipment to Test America and ALS Labs.

* There is one additional drum of purgewater on site for a total of 48 drums.

0900 TWT Rex Bohn on site. Went over Health and Safety concerns and JSA review. 9 wells remain for surveying.

Begin prepary coolers for shipment to ALS and Test America

1215 Crew off site. Bwl to FedEx to drop off sample coolers.
1300 Bwl back to Raleigh.
1500 Back in Raleigh. Storage to drop off equipment.
1530 Back at home.

08/03/2015

Purpose: gauge wells, groundwater sampling

ARCADIS: Robert Pigge, Brian Lougren

Sub :

Weather: 80 overcast Rain

PPE : Level D, PR, Long sleeves

7:00 Pack up truck

7:30 Depart for Wilmington

09:00 On-site

09:30 Off-site to DIS to pick up 55gal Drum

10:30 On-site, Health & Safety meeting with B. Lougren. Review JSAs, Read HASP

11:15 Began site wide gauging Unable to gauge AL-MW-10 due to high tide. Swampy, underwater

12:15 ~~Thunder storms~~ Off site for lunch and ice

12:40 On-site. Thunder storms and lightening move in. STOP work

15:15 Off site, secured site

08/04/2015 B0085757.1501 1/6

Purpose: Groundwater sampling
ARCADIS: Robert Pippe, Brian Lovgren
HE: Level D, long sleeves, PR
Weather 80° Rain

0700 On-site, H&S tailgate, calibrate equipment

07:28 Began purging AL-MW-04
Static DTW: 3.96 ft
Tubing set at 12 ft

Time	Temp	Condu.	DO	pH	ORP	DTW	Turb.
7:38	24.41	2.476	1.55	6.55	-129.1	3.97	7.63
7:43	24.42	2.546	1.52	6.39	-113.9	4.00	6.53
7:48	24.48	2.553	1.41	6.30	-96.5	4.01	7.11
7:53	24.43	2.548	1.54	6.25	-87.9	4.00	4.95
7:58	24.47	2.547	1.48	6.20	-85.2	4.00	3.63
8:03	24.52	2.550	1.44	6.18	-79.8	4.00	3.47

8:05 Sample collected from AL-MW-04 for Lead + Arsenic 6010C + Subcontract
1 250 ml Plastic Nitric Acid Lead 6020C
1 250 ml Plastic Nitric Acid Arsenic 7062
* 1 250 ml Plastic Nitric Acid Lead 6020
* 1 250 ml Plastic Nitric Acid Arsenic 7062
* Field Filtered 0.45 inline Filter
2 gallons removed prior to sampling
Characteristics: clear and colorless

08/04/2015 B0085757.1501 2/6

8:46 Set up on: AL-MW-03. Began purging
Static DTW: 7.62 Tube setting: 12 ft

Time	Temp	Cond.	DO	pH	ORP	DTW	Turb.
8:46	Start purging			175 ml/m			
8:56	24.10	1.844	2.11	5.95	39.4	7.64	6.71
9:01	23.96	1.845	1.56	5.95	41.6	7.65	5.33
9:06	24.01	1.837	1.26	5.94	42.1	7.65	4.56
9:11	24.07	1.803	1.03	5.94	42.4	7.68	4.45
9:16	24.03	1.815	0.91	5.94	41.5	7.66	5.00
9:21	24.09	1.805	0.83	5.94	40.5	7.66	3.88
9:26	24.00	1.800	0.76	5.94	40.3	7.66	3.46
9:31	24.02	1.796	0.65	5.94	39.5	7.66	3.30
9:36	23.94	1.791	0.61	5.94	39.7	7.66	3.71
9:41	23.94	1.788	0.60	5.94	39.5	7.66	4.35

09:42 Sample collected from AL-MW-03
1 250ml Plastic Nitric Acid Lead 6020
1 250ml Plastic Nitric Acid Arsenic 7062
* 1 250ml Plastic Nitric Acid Lead 6020
* 1 250ml Plastic Nitric Acid Arsenic 7062
* Field Filtered with 0.45 inline filter
2.5 gallon removed prior to sampling
Characteristics: clear and colorless

09:55 Set up on AL-MW-02
Static DTW: 6.24 ft Tube setting 12 ft

10:12 Began purging AL-MW-02

Time	Temp.	Cond.	DO	pH	ORP	DTW	Turb. ~~ORP~~
10:12	Start pump, purge at 200ml/min						
10:22	23.12	3.264	0.48	6.56	-142.1	6.20	6.78
10:27	23.08	3.293	0.42	6.58	-137.7	6.20	4.12
10:32	23.05	3.291	0.32	6.60	-142.0	6.20	4.26
10:37	22.83	3.304	0.31	6.61	-143.1	6.17	4.26
10:42	22.66	3.290	0.36	6.63	-148.1	6.17	4.79

10:45 Samples taken from AL-MW-02
1 250ml Plastic Nitric Acid Lead 6020
1 250ml Plastic Nitric Acid Arsenic 7062
*1 250ml Plastic Nitric Acid Lead 6020
*1 250ml Plastic Nitric Acid Arsenic 7062
* Field Filtered with 0.45u inline filter
2 gallons removed prior to sampling
characteristics: clear and colorless

10:55 Set up on AL-MW-09 DTW 4.53

11:20 Began purging AL-MW-09 intake 12ft

Time	Temp	Cond	DO	pH	ORP	DTW	Turb.
11:20	Start purging at 200ml/min						
11:30	24.24	3.054	0.42	3.85	16.6	4.56	9.70
11:35	24.40	2.964	0.41	3.91	1.9	4.56	4.92
11:40	24.19	2.904	0.40	4.02	-12.0	4.56	4.95
11:45	24.19	2.824	0.38	4.17	-21.5	4.56	4.50
11:50	24.14	2.753	0.38	4.29	-43.8	4.56	4.98

11:55	24.37	2.709	0.36	4.41	-49.4	4.56	4.99
12:00	24.60	2.693	0.36	4.47	-53.2	4.56	5.78

12:02 Samples taken from AL-MW-09
1 250ml Plastic Nitric Acid Lead 6020
1 250ml Plastic Nitric Acid Arsenic 7062
*1 250ml Plastic Nitric Acid Lead 6020
*1 250ml Plastic Nitric Acid Arsenic 7062
2 gallons purged prior to sampling
Characteristics: Clear, colorless, medium foul odor

12:20 Pump purge water at staging area

13:17 Began purging AL-MW-10
Static DTW: 3.42ft intake depth: 12ft

Time	Temp	Cond.	DO	pH	ORP	DTW	Turb
13:17	Start purging @ 200ml/min						
13:22	21.37	0.432	0.44	5.33	-22.8	3.48	74.6
13:37	21.30	0.460	0.42	5.30	-26.6	3.48	NM
13:42	21.33	0.457	0.43	5.41	-29.2	3.48	33.9
13:47	21.32	0.447	0.42	5.42	-31.0	3.48	24.9
13:52	21.35	0.443	0.42	5.43	-32.2	3.48	7.90

13:55 Samples taken of AL-MW-10 for:
1 250ml Plastic Nitric Acid Lead 6020
1 250ml Plastic Nitric Acid Arsenic 7062
*1 250ml Plastic Nitric Acid Lead 6020
*1 250ml Plastic Nitric Acid Arsenic 7062
* Field filtered with 0.45 micron filter
Characteristics: Clear and colorless

08/04/15 AL-MW-10: 2.5 gal removed before Sampling

B0085757.1501 5/6

14:10 Began setting up on AL-MW-08
Static DTW: 2.22 ft intake depth: 10ft

14:30 Began purging AL-MW-08

Time	Temp	Cond.	DO	pH	ORP	DTW	Turb.
14:30	Began purging @ 200 ml/min						
14:40	23.46	0.221	0.41	6.35	-9.1	2.03	21.7
14:45	23.57	0.219	0.36	6.36	-7.1	2.02	16.3
14:50	23.58	0.219	0.37	6.36	-5.2	2.02	16.0
14:55	23.64	0.220	0.40	6.37	0.0	2.02	12.1
15:00	23.68	0.220	0.45	6.37	3.4	2.02	9.08
15:05	23.70	0.221	0.49	6.37	6.6	2.02	8.10
15:10	23.75	0.222	0.50	6.38	9.8	2.02	6.14

15:12 Samples of AL-MW-08 taken
1 250 ml Plastic Nitric Acid Lead 6020
1 250 ml Plastic Nitric Acid Arsenic 7062
*1 250 ml Plastic Nitric Acid Lead 6020
*1 250 ml Plastic Nitric Acid Arsenic 7062
* Field filtered with 0.45 micron filter
Characteristics: Clear and Colorless
2.5 gallons Purged before Sampling

15:25 Began setting up on AL-MW
Static DTW: 3.91 ft Intake depth 10 ft

15:50 Began purging AL-MW-01

08/04/2015 B0085757.1601 8/6

Time	Temp	Cond.	DO	pH	ORP	DTW	Turbe
15:50	Start purging @ 200 ml/min						
16:00	22.39	0.803	0.34	5.65	-32.1	3.90	5.88
16:05	22.23	0.820	0.30	5.64	-39.4	3.90	3.52
16:10	22.41	0.825	0.30	5.65	-41.0	3.92	3.36
16:15	22.34	0.837	0.31	5.65	-44.1	3.93	3.04
16:20	22.14	0.941	0.30	5.64	-45.0	3.93	3.3

16:22 Samples of AL-MW-01 taken
1 250 ml Plastic Nitric Acid Lead 6020
1 250 ml Plastic Nitric Acid Arsenic 7062
*1 250 ml Plastic Nitric Acid Lead 6020
*1 250 ml Plastic Nitric Acid Arsenic 7062
* Field Filtered with 0.45 mm filter
Characteristics: Clear and Colorless
2 gallons purged before sampling

16:25 off site, secured site

Note Field parameter units

Time	Temp	Cond	DO	pH	ORP	DTW	Turb.
~~24hr~~	C°	mS/cm	mg/L	units	mV	ft	NTU

08/05/2015 B0085757.1501 Y1

Purpose: Groundwater sampling, Survey wells
ARCADIS: Robert Pigge, Brian Lougen
Sub: Taylor Wiseman & Taylor Rex
Weather: 90 + Sunny humid
PPE: Level D, gloves, long sleeve
06:45 Leave for site
0700 On-site, H&S tailgate
07:30 Ground water sampling on AL-MW-12 with Brian L.
Notes on purge readings in Brian's notes
0850 Rex from TWT on-site, H&S tailgate, Review SPSAs
09:15 Begin surveying wells
11:05 TWT complete with well survey
11:10 TWT continued with surveying additional existing points
12:15 TWT complete
12:20 ARCADIS & TWT off site, Secured site

Appendix C

Laboratory Analytical Reports and Data Validation Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-84512-1
Client Project/Site: VCC Almont

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mike Purvis

Authorized for release by:
8/17/2015 3:42:21 PM

Heather Wagner, Project Manager I
(615)301-5763
heather.wagner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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.

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Case Narrative 4
Definitions 5
Client Sample Results 6
QC Sample Results 24
QC Association 26
Chronicle 28
Method Summary 33
Certification Summary 34
Chain of Custody 35
Receipt Checklists 38

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-84512-1	AL-MW-04D	Water	08/04/15 08:20	08/06/15 08:50
490-84512-2	AL-MW-03D	Water	08/04/15 09:30	08/06/15 08:50
490-84512-3	AL-MW-02D	Water	08/04/15 10:40	08/06/15 08:50
490-84512-4	AL-MW-11D	Water	08/04/15 11:40	08/06/15 08:50
490-84512-5	AL-MW-11	Water	08/04/15 12:50	08/06/15 08:50
490-84512-6	AL-MW-06	Water	08/04/15 14:05	08/06/15 08:50
490-84512-7	AL-MW-07	Water	08/04/15 14:55	08/06/15 08:50
490-84512-8	AL-MW-05	Water	08/04/15 16:00	08/06/15 08:50
490-84512-9	AL-QAQC-DUP-01	Water	08/04/15 01:00	08/06/15 08:50
490-84512-10	AL-MW-04	Water	08/04/15 08:05	08/06/15 08:50
490-84512-11	AL-MW-03	Water	08/04/15 09:42	08/06/15 08:50
490-84512-12	AL-MW-02	Water	08/04/15 10:45	08/06/15 08:50
490-84512-13	AL-MW-09	Water	08/04/15 12:02	08/06/15 08:50
490-84512-14	AL-MW-10	Water	08/04/15 13:55	08/06/15 08:50
490-84512-15	AL-MW-08	Water	08/04/15 15:12	08/06/15 08:50
490-84512-16	AL-MW-01	Water	08/04/15 16:22	08/06/15 08:50
490-84512-17	AL-QAQC-EB-01	Water	08/04/15 16:30	08/06/15 08:50
490-84512-18	AL-MW-12	Water	08/05/15 08:05	08/06/15 08:50

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Job ID: 490-84512-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-84512-1

Comments
No additional comments.

Receipt
The samples were received on 8/6/2015 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2º C.

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

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04D

Lab Sample ID: 490-84512-1

Date Collected: 08/04/15 08:20
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:18	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:58	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-03D

Lab Sample ID: 490-84512-2

Date Collected: 08/04/15 09:30
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.280		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:22	1
Lead	0.00520		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.290		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 01:13	1
Lead	0.00690		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 01:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-02D

Lab Sample ID: 490-84512-3

Date Collected: 08/04/15 10:40
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0325		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:26	1
Lead	0.00510		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0354		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 01:17	1
Lead	0.00470	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 01:17	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-11D

Lab Sample ID: 490-84512-4

Date Collected: 08/04/15 11:40
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 14:21	1
Lead	**0.00460**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 14:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:15	1
Lead	**0.00510**		0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-11

Lab Sample ID: 490-84512-5

Date Collected: 08/04/15 12:50
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 14:57	1
Lead	**0.00390**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 14:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:47	1
Lead	**0.00330**	**J**	0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-06

Lab Sample ID: 490-84512-6

Date Collected: 08/04/15 14:05
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0146**		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:01	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:51	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-07

Lab Sample ID: 490-84512-7

Date Collected: 08/04/15 14:55
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0715		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:05	1
Lead	0.00290	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0692		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:55	1
Lead	0.00330	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-05

Lab Sample ID: 490-84512-8

Date Collected: 08/04/15 16:00
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:10	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:10	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:00	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-QAQC-DUP-01

Lab Sample ID: 490-84512-9

Date Collected: 08/04/15 01:00
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:14	1
Lead	**0.00380**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:04	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04

Lab Sample ID: 490-84512-10

Date Collected: 08/04/15 08:05
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.73		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:29	1
Lead	0.0728		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.75		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:09	1
Lead	0.0564		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-03

Lab Sample ID: 490-84512-11

Date Collected: 08/04/15 09:42
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.348**		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:33	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.354**		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:13	1
Lead	**0.00290**	**J**	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-02

Lab Sample ID: 490-84512-12

Date Collected: 08/04/15 10:45

Matrix: Water

Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.352		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:37	1
Lead	0.00460	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:37	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.326		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:27	1
Lead	0.00470	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-09

Lab Sample ID: 490-84512-13

Date Collected: 08/04/15 12:02
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.202		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:41	1
Lead	0.0235		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.167		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:32	1
Lead	0.0228		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-10

Lab Sample ID: 490-84512-14

Date Collected: 08/04/15 13:55
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:46	1
Lead	**0.00200**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:36	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-08

Lab Sample ID: 490-84512-15

Date Collected: 08/04/15 15:12
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0138		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:50	1
Lead	0.00320	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0159		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:41	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-01

Lab Sample ID: 490-84512-16

Date Collected: 08/04/15 16:22

Matrix: Water

Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0377		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:54	1
Lead	0.00250	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0395		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:45	1
Lead	0.00350	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-QAQC-EB-01

Lab Sample ID: 490-84512-17

Date Collected: 08/04/15 16:30
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:59	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:59	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:49	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-12

Lab Sample ID: 490-84512-18

Date Collected: 08/05/15 08:05
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0201		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:13	1
Lead	0.00530		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0194		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:54	1
Lead	0.00520		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:54	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 490-271621/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 272224 — **Prep Batch: 271621**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 13:59	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 13:59	1

Lab Sample ID: LCS 490-271621/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 272224 — **Prep Batch: 271621**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.05130		mg/L		103	80 - 120
Lead	0.0500	0.05490		mg/L		110	80 - 120

Lab Sample ID: LCSD 490-271621/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 272224 — **Prep Batch: 271621**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0500	0.05140		mg/L		103	80 - 120	0	20
Lead	0.0500	0.05400		mg/L		108	80 - 120	2	20

Lab Sample ID: 490-84512-4 MS — **Client Sample ID: AL-MW-11D**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 272224 — **Prep Batch: 271621**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.0500	0.05190		mg/L		104	75 - 125
Lead	0.00460	J	0.0500	0.05750		mg/L		106	75 - 125

Lab Sample ID: 490-84512-4 MSD — **Client Sample ID: AL-MW-11D**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 272224 — **Prep Batch: 271621**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.0500	0.05170		mg/L		103	75 - 125	0	20
Lead	0.00460	J	0.0500	0.05800		mg/L		107	75 - 125	1	20

Lab Sample ID: MB 490-271589/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 272224 — **Prep Batch: 271589**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:06	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:06	1

Lab Sample ID: LCS 490-271589/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 272224 — **Prep Batch: 271589**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.05240		mg/L		105	80 - 120

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

Lab Sample ID: LCS 490-271589/2-A
Matrix: Water
Analysis Batch: 272224

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 271589

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			0.0500	0.05570		mg/L		111	80 - 120		

Lab Sample ID: 490-84512-4 MS
Matrix: Water
Analysis Batch: 272224

Client Sample ID: AL-MW-11D
Prep Type: Dissolved
Prep Batch: 271589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	ND		0.0500	0.05790		mg/L		116	75 - 125		
Lead	0.00510		0.0500	0.05790		mg/L		106	75 - 125		

Lab Sample ID: 490-84512-4 MSD
Matrix: Water
Analysis Batch: 272224

Client Sample ID: AL-MW-11D
Prep Type: Dissolved
Prep Batch: 271589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.0500	0.05470		mg/L		109	75 - 125	6	20
Lead	0.00510		0.0500	0.05930		mg/L		108	75 - 125	2	20

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Metals

Prep Batch: 271589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-84512-1	AL-MW-04D	Dissolved	Water	3005A	
490-84512-2	AL-MW-03D	Dissolved	Water	3005A	
490-84512-3	AL-MW-02D	Dissolved	Water	3005A	
490-84512-4	AL-MW-11D	Dissolved	Water	3005A	
490-84512-4 MS	AL-MW-11D	Dissolved	Water	3005A	
490-84512-4 MSD	AL-MW-11D	Dissolved	Water	3005A	
490-84512-5	AL-MW-11	Dissolved	Water	3005A	
490-84512-6	AL-MW-06	Dissolved	Water	3005A	
490-84512-7	AL-MW-07	Dissolved	Water	3005A	
490-84512-8	AL-MW-05	Dissolved	Water	3005A	
490-84512-9	AL-QAQC-DUP-01	Dissolved	Water	3005A	
490-84512-10	AL-MW-04	Dissolved	Water	3005A	
490-84512-11	AL-MW-03	Dissolved	Water	3005A	
490-84512-12	AL-MW-02	Dissolved	Water	3005A	
490-84512-13	AL-MW-09	Dissolved	Water	3005A	
490-84512-14	AL-MW-10	Dissolved	Water	3005A	
490-84512-15	AL-MW-08	Dissolved	Water	3005A	
490-84512-16	AL-MW-01	Dissolved	Water	3005A	
490-84512-17	AL-QAQC-EB-01	Dissolved	Water	3005A	
490-84512-18	AL-MW-12	Dissolved	Water	3005A	
LCS 490-271589/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 490-271589/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 271621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-84512-1	AL-MW-04D	Total/NA	Water	3010A	
490-84512-2	AL-MW-03D	Total/NA	Water	3010A	
490-84512-3	AL-MW-02D	Total/NA	Water	3010A	
490-84512-4	AL-MW-11D	Total/NA	Water	3010A	
490-84512-4 MS	AL-MW-11D	Total/NA	Water	3010A	
490-84512-4 MSD	AL-MW-11D	Total/NA	Water	3010A	
490-84512-5	AL-MW-11	Total/NA	Water	3010A	
490-84512-6	AL-MW-06	Total/NA	Water	3010A	
490-84512-7	AL-MW-07	Total/NA	Water	3010A	
490-84512-8	AL-MW-05	Total/NA	Water	3010A	
490-84512-9	AL-QAQC-DUP-01	Total/NA	Water	3010A	
490-84512-10	AL-MW-04	Total/NA	Water	3010A	
490-84512-11	AL-MW-03	Total/NA	Water	3010A	
490-84512-12	AL-MW-02	Total/NA	Water	3010A	
490-84512-13	AL-MW-09	Total/NA	Water	3010A	
490-84512-14	AL-MW-10	Total/NA	Water	3010A	
490-84512-15	AL-MW-08	Total/NA	Water	3010A	
490-84512-16	AL-MW-01	Total/NA	Water	3010A	
490-84512-17	AL-QAQC-EB-01	Total/NA	Water	3010A	
490-84512-18	AL-MW-12	Total/NA	Water	3010A	
LCS 490-271621/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 490-271621/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 490-271621/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Analysis Batch: 272224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-84512-1	AL-MW-04D	Dissolved	Water	6010C	271589
490-84512-1	AL-MW-04D	Total/NA	Water	6010C	271621
490-84512-2	AL-MW-03D	Dissolved	Water	6010C	271589
490-84512-2	AL-MW-03D	Total/NA	Water	6010C	271621
490-84512-3	AL-MW-02D	Dissolved	Water	6010C	271589
490-84512-3	AL-MW-02D	Total/NA	Water	6010C	271621
490-84512-4	AL-MW-11D	Dissolved	Water	6010C	271589
490-84512-4	AL-MW-11D	Total/NA	Water	6010C	271621
490-84512-4 MS	AL-MW-11D	Dissolved	Water	6010C	271589
490-84512-4 MS	AL-MW-11D	Total/NA	Water	6010C	271621
490-84512-4 MSD	AL-MW-11D	Dissolved	Water	6010C	271589
490-84512-4 MSD	AL-MW-11D	Total/NA	Water	6010C	271621
490-84512-5	AL-MW-11	Dissolved	Water	6010C	271589
490-84512-5	AL-MW-11	Total/NA	Water	6010C	271621
490-84512-6	AL-MW-06	Dissolved	Water	6010C	271589
490-84512-6	AL-MW-06	Total/NA	Water	6010C	271621
490-84512-7	AL-MW-07	Dissolved	Water	6010C	271589
490-84512-7	AL-MW-07	Total/NA	Water	6010C	271621
490-84512-8	AL-MW-05	Dissolved	Water	6010C	271589
490-84512-8	AL-MW-05	Total/NA	Water	6010C	271621
490-84512-9	AL-QAQC-DUP-01	Dissolved	Water	6010C	271589
490-84512-9	AL-QAQC-DUP-01	Total/NA	Water	6010C	271621
490-84512-10	AL-MW-04	Dissolved	Water	6010C	271589
490-84512-10	AL-MW-04	Total/NA	Water	6010C	271621
490-84512-11	AL-MW-03	Dissolved	Water	6010C	271589
490-84512-11	AL-MW-03	Total/NA	Water	6010C	271621
490-84512-12	AL-MW-02	Dissolved	Water	6010C	271589
490-84512-12	AL-MW-02	Total/NA	Water	6010C	271621
490-84512-13	AL-MW-09	Dissolved	Water	6010C	271589
490-84512-13	AL-MW-09	Total/NA	Water	6010C	271621
490-84512-14	AL-MW-10	Dissolved	Water	6010C	271589
490-84512-14	AL-MW-10	Total/NA	Water	6010C	271621
490-84512-15	AL-MW-08	Dissolved	Water	6010C	271589
490-84512-15	AL-MW-08	Total/NA	Water	6010C	271621
490-84512-16	AL-MW-01	Dissolved	Water	6010C	271589
490-84512-16	AL-MW-01	Total/NA	Water	6010C	271621
490-84512-17	AL-QAQC-EB-01	Dissolved	Water	6010C	271589
490-84512-17	AL-QAQC-EB-01	Total/NA	Water	6010C	271621
490-84512-18	AL-MW-12	Dissolved	Water	6010C	271589
490-84512-18	AL-MW-12	Total/NA	Water	6010C	271621
LCS 490-271589/2-A	Lab Control Sample	Total Recoverable	Water	6010C	271589
LCS 490-271621/2-A	Lab Control Sample	Total/NA	Water	6010C	271621
LCSD 490-271621/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	271621
MB 490-271589/1-A	Method Blank	Total Recoverable	Water	6010C	271589
MB 490-271621/1-A	Method Blank	Total/NA	Water	6010C	271621

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04D — Lab Sample ID: 490-84512-1

Date Collected: 08/04/15 08:20 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:58	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 16:18	TSC	TAL NSH

Client Sample ID: AL-MW-03D — Lab Sample ID: 490-84512-2

Date Collected: 08/04/15 09:30 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 01:13	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 16:22	TSC	TAL NSH

Client Sample ID: AL-MW-02D — Lab Sample ID: 490-84512-3

Date Collected: 08/04/15 10:40 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 01:17	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 16:26	TSC	TAL NSH

Client Sample ID: AL-MW-11D — Lab Sample ID: 490-84512-4

Date Collected: 08/04/15 11:40 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/10/15 23:15	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 14:21	TSC	TAL NSH

Client Sample ID: AL-MW-11 — Lab Sample ID: 490-84512-5

Date Collected: 08/04/15 12:50 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/10/15 23:47	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-11 — Lab Sample ID: 490-84512-5

Date Collected: 08/04/15 12:50 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	272224	08/10/15 14:57	TSC	TAL NSH

Client Sample ID: AL-MW-06 — Lab Sample ID: 490-84512-6

Date Collected: 08/04/15 14:05 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/10/15 23:51	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:01	TSC	TAL NSH

Client Sample ID: AL-MW-07 — Lab Sample ID: 490-84512-7

Date Collected: 08/04/15 14:55 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/10/15 23:55	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:05	TSC	TAL NSH

Client Sample ID: AL-MW-05 — Lab Sample ID: 490-84512-8

Date Collected: 08/04/15 16:00 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:00	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:10	TSC	TAL NSH

Client Sample ID: AL-QAQC-DUP-01 — Lab Sample ID: 490-84512-9

Date Collected: 08/04/15 01:00 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:04	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:14	TSC	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04 — Lab Sample ID: 490-84512-10

Date Collected: 08/04/15 08:05
Date Received: 08/06/15 08:50
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:09	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:29	TSC	TAL NSH

Client Sample ID: AL-MW-03 — Lab Sample ID: 490-84512-11

Date Collected: 08/04/15 09:42
Date Received: 08/06/15 08:50
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:13	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:33	TSC	TAL NSH

Client Sample ID: AL-MW-02 — Lab Sample ID: 490-84512-12

Date Collected: 08/04/15 10:45
Date Received: 08/06/15 08:50
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:27	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:37	TSC	TAL NSH

Client Sample ID: AL-MW-09 — Lab Sample ID: 490-84512-13

Date Collected: 08/04/15 12:02
Date Received: 08/06/15 08:50
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:32	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:41	TSC	TAL NSH

Client Sample ID: AL-MW-10 — Lab Sample ID: 490-84512-14

Date Collected: 08/04/15 13:55
Date Received: 08/06/15 08:50
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:36	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-10 — Lab Sample ID: 490-84512-14

Date Collected: 08/04/15 13:55 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	272224	08/10/15 15:46	TSC	TAL NSH

Client Sample ID: AL-MW-08 — Lab Sample ID: 490-84512-15

Date Collected: 08/04/15 15:12 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:41	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:50	TSC	TAL NSH

Client Sample ID: AL-MW-01 — Lab Sample ID: 490-84512-16

Date Collected: 08/04/15 16:22 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:45	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:54	TSC	TAL NSH

Client Sample ID: AL-QAQC-EB-01 — Lab Sample ID: 490-84512-17

Date Collected: 08/04/15 16:30 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:49	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 15:59	TSC	TAL NSH

Client Sample ID: AL-MW-12 — Lab Sample ID: 490-84512-18

Date Collected: 08/05/15 08:05 — **Matrix: Water**
Date Received: 08/06/15 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			271589	08/07/15 12:00	ZLN	TAL NSH
Dissolved	Analysis	6010C		1	272224	08/11/15 00:54	TSC	TAL NSH
Total/NA	Prep	3010A			271621	08/07/15 13:03	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	272224	08/10/15 16:13	TSC	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

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

Protocol References:

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-16
Arizona	State Program	9	AZ0473	05-05-16
Arkansas DEQ	State Program	6	88-0737	04-25-16
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200010	12-09-15
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	10-31-15
Kentucky (UST)	State Program	4	19	06-30-16
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-16
Maryland	State Program	3	316	03-31-16
Massachusetts	State Program	1	M-TN032	06-30-16
Minnesota	NELAP	5	047-999-345	12-31-15
Mississippi	State Program	4	N/A	06-30-16
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-16
New Hampshire	NELAP	1	2963	10-09-15
New Jersey	NELAP	2	TN965	09-30-15
New York	NELAP	2	11342	03-31-16
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-15 *
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-15 *
Oregon	NELAP	10	TN200001	04-27-16
Pennsylvania	NELAP	3	68-00585	06-30-16
Rhode Island	State Program	1	LAO00268	12-30-15
South Carolina	State Program	4	84009 (001)	02-28-16
South Carolina (DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-15 *
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-15 *
Virginia	NELAP	3	460152	06-14-16
Washington	State Program	10	C789	07-19-15 *
West Virginia DEP	State Program	3	219	02-28-16
Wisconsin	State Program	5	998020430	08-31-15 *
Wyoming (UST)	A2LA	8	453.07	12-31-15

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-84512 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 8/6/2015 @ 0850

1. Tracking # 4214 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 12080142

2. Temperature of rep. sample or temp blank when opened: 1.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: One front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) DA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) MDM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) MDM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) MDM

I certify that I attached a label with the unique LIMS number to each container (intial) MDM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/17/2015

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.	Loc: 490 84512
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 1 of 2	
Company: ARCADIS U.S., Inc.				Job #:	
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard				
City: Raleigh	TAT Requested (days):				
State, Zip: NC, 27607-5073					
Phone: 919-610-5562	PO #: Purchase Order Requested				
Email: mike.purvis@arcadis-us.com	WO #:				
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238				
Site: VCC-Almont Wilmington, NC	SSOW#:				

Analysis Requested

Preservation Codes.

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	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)	6010C, SUBCONTRACT	Total As, Pb (6010)	Diss As, Pb (6010)	Total Number of containers	Special Instructions/Note:
				Preservation Code:				D	D	D		
1	AL-MW-04D	8-4-15	0820	G	Water	X			1	1		
2	AL-MW-03D	8-4-15	0930	G	Water	X			1	1		
3	AL-MW-02D	8-4-15	1040	G	Water	X			1	1		
4	AL-MW-11D	8-4-15	1140	G	Water	X			1	1		
	AL-MW-11D (MS)	8-4-15	1140	G	Water	X	X		1	1		
	AL-MW-11D (MSD)	8-4-15	1140	G	Water	X	X		1	1		
5	AL-MW-11	8-4-15	1250	G	Water	X			1	1		
6	AL-MW-06	8-4-15	1405	G	Water	X			1	1		
7	AL-MW-07	8-4-15	1455	G	Water	X			1	1		
8	AL-MW-05	8-4-15	1600	G	Water	X			1	1		
9	AL-QAQC-DUP-01	8-4-15	NIR	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15 / 1400	Arcadis	FedEx	8-5-15 / 1400	FedEx
				8-6-15 0850	TAN

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRO

Loc: 490
84512

8/17/2015

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.2
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238			
Site: VCC-Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	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)	6010C, SUBCONTRACT	Total As, Pb (6010)	Diss As, Pb (6010)	Total Number of containers	Special Instructions/Note:
				Preservation Code:		X	X	D	D	D	X	
10	AL-MW-04	8-4-15	0805	G	Water	X			1	1		
11	AL-MW-03	8-4-15	0942	G	Water	X			1	1		
12	AL-MW-02	8-4-15	1045	G	Water	X			1	1		
13	AL-MW-09	8-4-15	1202	G	Water	X			1	1		
14	AL-MW-10	8-4-15	1355	G	Water	X			1	1		
15	AL-MW-08	8-4-15	1512	G	Water	X			1	1		
16	AL-MW-01	8-4-15	1622	G	Water	X			1	1		
17	AL-QAQC-EB-01	8-4-15	1630	G	Water	X			1	1		
18	AL-MW-12	8-5-15	0805	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15/1400	Arcadis	Fed Ex	8-5-15/1400	Fed Ex
				8-6-15@0850	TAN

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 490-84512-1

Login Number: 84512
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	1.2
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 containers received and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
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 Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-84512-2
Client Project/Site: VCC Almont
Revision: 2

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mike Purvis

Authorized for release by:
9/22/2015 8:32:07 AM

Heather Wagner, Project Manager I
(615)301-5763
heather.wagner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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.

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Definitions 4
Method Summary 5
Certification Summary 6
Subcontract Data 7
Receipt Checklists 123

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-84512-1	AL-MW-04D	Water	08/04/15 08:20	08/06/15 08:50
490-84512-2	AL-MW-03D	Water	08/04/15 09:30	08/06/15 08:50
490-84512-3	AL-MW-02D	Water	08/04/15 10:40	08/06/15 08:50
490-84512-4	AL-MW-11D	Water	08/04/15 11:40	08/06/15 08:50
490-84512-5	AL-MW-11	Water	08/04/15 12:50	08/06/15 08:50
490-84512-6	AL-MW-06	Water	08/04/15 14:05	08/06/15 08:50
490-84512-7	AL-MW-07	Water	08/04/15 14:55	08/06/15 08:50
490-84512-8	AL-MW-05	Water	08/04/15 16:00	08/06/15 08:50
490-84512-9	AL-QAQC-DUP-01	Water	08/04/15 01:00	08/06/15 08:50
490-84512-10	AL-MW-04	Water	08/04/15 08:05	08/06/15 08:50
490-84512-11	AL-MW-03	Water	08/04/15 09:42	08/06/15 08:50
490-84512-12	AL-MW-02	Water	08/04/15 10:45	08/06/15 08:50
490-84512-13	AL-MW-09	Water	08/04/15 12:02	08/06/15 08:50
490-84512-14	AL-MW-10	Water	08/04/15 13:55	08/06/15 08:50
490-84512-15	AL-MW-08	Water	08/04/15 15:12	08/06/15 08:50
490-84512-16	AL-MW-01	Water	08/04/15 16:22	08/06/15 08:50
490-84512-17	AL-QAQC-EB-01	Water	08/04/15 16:30	08/06/15 08:50
490-84512-18	AL-MW-12	Water	08/05/15 08:05	08/06/15 08:50

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-2

Method	Method Description	Protocol	Laboratory
Dissolved Arsenic by 7062	General Sub Contract Method	NONE	
Total Arsenic by 7062	General Sub Contract Method	NONE	

Protocol References:

NONE = NONE

Laboratory References:

= Kelso WA, 1317 S. 13th Avenue, Kelso, WA 98626

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-2

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-16
Arizona	State Program	9	AZ0473	05-05-16
Arkansas DEQ	State Program	6	88-0737	04-25-16
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200010	12-09-15
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	10-31-15
Kentucky (UST)	State Program	4	19	06-30-16
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-16
Maryland	State Program	3	316	03-31-16
Massachusetts	State Program	1	M-TN032	06-30-16
Minnesota	NELAP	5	047-999-345	12-31-15
Mississippi	State Program	4	N/A	06-30-16
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-16
New Hampshire	NELAP	1	2963	10-09-15
New Jersey	NELAP	2	TN965	09-30-15
New York	NELAP	2	11342	03-31-16
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-15 *
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-15 *
Oregon	NELAP	10	TN200001	04-27-16
Pennsylvania	NELAP	3	68-00585	06-30-16
Rhode Island	State Program	1	LAO00268	12-30-15
South Carolina	State Program	4	84009 (001)	02-28-16
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-16
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-16
Virginia	NELAP	3	460152	06-14-16
Washington	State Program	10	C789	07-19-16
West Virginia DEP	State Program	3	219	02-28-16
Wisconsin	State Program	5	998020430	08-31-16
Wyoming (UST)	A2LA	8	453.07	12-31-15

* Certification renewal pending - certification considered valid.

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

September 21, 2015

Analytical Report for Service Request No: K1508571
Revised Service Request No: K1508571.02

Heather Wagner
Test America, Incorporated, Nashville Division
2960 Foster Creighton Drive
Nashville, TN 37204

RE: XOM Raleigh/Almont Groundwater / 49001238

Dear Heather,

Enclosed is the revised report for samples submitted to our laboratory August 06, 2015
For your reference, these analyses have been assigned our service request number **K1508571.**

The project name has been corrected in this revision which supercedes the report dated September 01, 2015.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

We apologize for any inconvenience this may have created.

Please contact me if you have any questions. My extension is 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Metals
Raw Data
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1508571
Project:	XOM Raleigh/ Almont Groundwater/ 49001238	**Date Received:**	08/06/15
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eighteen water samples were received for analysis at ALS Environmental on 08/06/15. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total and Dissolved Metals

No anomalies associated with the analysis of these samples were observed.

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

K1508571

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.1
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh/Almont Groundwater	Project #: 49001238			
Site: VCC Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	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)	6010C, SUBCONTRACT	Total As (7062)	Diss As (7062)	Total Number of containers	Special Instructions/Note:
			Preservation Code		X	X	D	D	D	X	
AL-MW-04D	8-4-15	0820	G	Water	X			1	1		
AL-MW-03D	8-4-15	0830	G	Water	X			1	1		
AL-MW-02D	8-4-15	1040	G	Water	X			1	1		
AL-MW-11D	8-4-15	1140	G	Water	X			1	1		
AL-MW-11D (MS)	8-4-15	1140	G	Water	X	X		1	1		
AL-MW-11D (MSD)	8-4-15	1140	G	Water	X			1	1		
AL-MW-11	8-4-15	1250	G	Water	X			1	1		
AL-MW-06	8-4-15	1405	G	Water	X			1	1		
AL-MW-07	8-4-15	1455	G	Water	X			1	1		
AL-MW-05	8-4-15	1600	G	Water	X			1	1		
AL-QAQC-DUP-01	8-4-15	NIR	G	Water	X			1	1		

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15/1400	Arcadis	FedEx	8-5-15/1400	
			Kelly Reed	8/6/15 17:30	PLS

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

K1508571

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.2
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238			
Site: VCC Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	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)	6010C, SUBCONTRACT	Total As (7060)	Diss As (7060)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	0	0	X	
AL-MW-04	8-4-15	0805	G	Water	X			1	1		
AL-MW-03	8-4-15	0942	G	Water	X			1	1		
AL-MW-02	8-4-15	1045	G	Water	X			1	1		
AL-MW-09	8-4-15	1202	G	Water	X			1	1		
AL-MW-10	8-4-15	1355	G	Water	X			1	1		
AL-MW-08	8-4-15	1512	G	Water	X			1	1		
AL-MW-01	8-4-15	1622	G	Water	X			1	1		
AL-QAQC-EB-01	8-4-15	1630	G	Water	X			1	1		
AL-MW-12	8-5-15	0805	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15 / 1400	Arcadis	FedEx	8-5-15 / 1400	FedEx
			Kelly Reed	8-6-15 11:30	TMS

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

PC CL

Cooler Receipt and Preservation Form

Client / Project: Arcadis US Service Request *K15* 08571

Received: 8/6/15 Opened: 8/6/15 By: KR Unloaded: 8/6/15 By: KR

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front 1 Back

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.5	—	—	—	+0.2	358	490-41108-1398	8081 8521 4990	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Emailed for EDD format requirements - CL 8/6/15

Page ____ ***of*** ____

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04D** **Lab Code:** **K1508571-001**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	1.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04D** **Lab Code:** **K1508571-001DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	1.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03D** **Lab Code:** **K1508571-002**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	25.0	5.0	50.0	08/10/15	08/17/15	381		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03D** **Lab Code:** **K1508571-002DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	25.0	5.0	50.0	08/12/15	08/17/15	363		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02D** **Lab Code:** **K1508571-003**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/10/15	08/17/15	45.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02D** **Lab Code:** **K1508571-003DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/12/15	08/17/15	43.9		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11D** **Lab Code:** **K1508571-004**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.8	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11D** **Lab Code:** **K1508571-004DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	1.0		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11** **Lab Code:** **K1508571-005**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	4.0		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11** **Lab Code:** **K1508571-005DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	3.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-06** **Lab Code:** **K1508571-006**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	14.2		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-06** **Lab Code:** **K1508571-006DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	13.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-07** **Lab Code:** **K1508571-007**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/10/15	08/17/15	90.4		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-07** **Lab Code:** **K1508571-007DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/12/15	08/17/15	87.3		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-05** **Lab Code:** **K1508571-008**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-05** **Lab Code:** **K1508571-008DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-DUP-01** **Lab Code:** **K1508571-009**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	3.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-DUP-01** **Lab Code:** **K1508571-009DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	4.3		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04** **Lab Code:** **K1508571-010**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	500	100	1000.0	08/10/15	08/17/15	4860		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04** **Lab Code:** **K1508571-010DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	500	100	1000.0	08/12/15	08/17/15	4720		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03** **Lab Code:** **K1508571-011**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/10/15	08/17/15	398		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03** **Lab Code:** **K1508571-011DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/12/15	08/17/15	397		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02** **Lab Code:** **K1508571-012**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/10/15	08/17/15	392		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02** **Lab Code:** **K1508571-012DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/12/15	08/17/15	358		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-09** **Lab Code:** **K1508571-013**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/10/15	08/17/15	262		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-09** **Lab Code:** **K1508571-013DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/12/15	08/17/15	173		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-10** **Lab Code:** **K1508571-014**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-10** **Lab Code:** **K1508571-014DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-08** **Lab Code:** **K1508571-015**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	2.0	0.4	4.0	08/10/15	08/17/15	22.1		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-08** **Lab Code:** **K1508571-015DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	16.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-01** **Lab Code:** **K1508571-016**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/10/15	08/17/15	50.5		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-01** **Lab Code:** **K1508571-016DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/12/15	08/17/15	44.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-EB-01** **Lab Code:** **K1508571-017**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-EB-01** **Lab Code:** **K1508571-017DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/05/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-12** **Lab Code:** **K1508571-018**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/10/15	08/17/15	24.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/05/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-12** **Lab Code:** **K1508571-018DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/12/15	08/17/15	22.4		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1508654-01**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1508657-01**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.2	U	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Arsenic	7.50	7.77	104	7.50	7.89	105	7.89	105	7062

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Arsenic				7.50	7.49	100	7.36	98	7062

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Arsenic				7.50	7.67	102	8.21	109	7062

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Arsenic				7.50	7.72	103	8.21	109	7062

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Arsenic				7.50	7.59	101	7.77	104	7062

Metals

- 2b -
CRDL STANDARD FOR AA AND ICP

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Arsenic	0.50	0.61	122					

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Arsenic	0.1	U	0.1	U	0.1	U	0.4	J	7062

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Arsenic			0.1	U	0.1	U	0.1	U	7062

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Arsenic			0.1	U	0.1	U	0.1	U	7062

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Arsenic			0.1	U					7062

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Units:** UG/L

Project Name: XOM Raleigh/Almont Groundwater **Basis:** NA

Matrix: WATER

Sample Name: AL-MW-11DS **Lab Code:** K1508571-004DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	19.7		1.0		16.00	117		7062

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Units:** UG/L

Project Name: XOM Raleigh/Almont Groundwater **Basis:** NA

Matrix: WATER

Sample Name: AL-MW-11DS **Lab Code:** K1508571-004S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	18.3		0.8	J	16.00	109		7062

An empty field in the Control Limit column indicates the control limit is not applicable

ALS Group USA, Corp.
dba ALS Environmental

Metals

- 6 -

DUPLICATES

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Units:** UG/L

Project Name: XOM Raleigh/Almont Groundwater **Basis:** NA

Matrix: WATER

Sample Name: AL-MW-11DD **Lab Code:** K1508571-004D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		0.8	J	0.9	J	11.8		7062

An empty field in the Control Limit column indicates the control limit is not applicable.

ALS Group USA, Corp.
dba ALS Environmental

Metals

- 6 -

DUPLICATES

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Units:** UG/L

Project Name: XOM Raleigh/Almont Groundwater **Basis:** NA

Matrix: WATER

Sample Name: AL-MW-11DD **Lab Code:** K1508571-004DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		1.0		0.8	J	22.2		7062

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Aqueous LCS Source: ALS MIXED **Solid LCS Source:**

Analyte	Aqueous (ug/L) True	Aqueous (ug/L) Found	Aqueous (ug/L) %R	Solid (mg/kg) True	Solid (mg/kg) Found	Solid (mg/kg) C	Solid (mg/kg) Limits	Solid (mg/kg) %R
Arsenic	10	11.4	114					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Aqueous LCS Source: ALS MIXED **Solid LCS Source:**

Analyte	Aqueous (ug/L) True	Aqueous (ug/L) Found	Aqueous (ug/L) %R	Solid (mg/kg) True	Solid (mg/kg) Found	Solid (mg/kg) C	Solid (mg/kg) Limits	Solid (mg/kg) %R
Arsenic	10	9.8	98					

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

ICP/ICP-MS ID #:

GFAA ID #: K-FLAA-02 **AA ID #:**

Analyte	Wave-length (nm)	Back-ground	MRL ug/L	MDL ug/L	M
Arsenic	193.6		0.5	0.1	H

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Method: F

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1508571-001	08/10/15	25.0	25.0
K1508571-002	08/10/15	25.0	25.0
K1508571-003	08/10/15	25.0	25.0
K1508571-004	08/10/15	25.0	25.0
K1508571-004D	08/10/15	25.0	25.0
K1508571-004S	08/10/15	25.0	25.0
K1508571-005	08/10/15	25.0	25.0
K1508571-006	08/10/15	25.0	25.0
K1508571-007	08/10/15	25.0	25.0
K1508571-008	08/10/15	25.0	25.0
K1508571-009	08/10/15	25.0	25.0
K1508571-010	08/10/15	25.0	25.0
K1508571-011	08/10/15	25.0	25.0
K1508571-012	08/10/15	25.0	25.0
K1508571-013	08/10/15	25.0	25.0
K1508571-014	08/10/15	25.0	25.0
K1508571-015	08/10/15	25.0	25.0
K1508571-016	08/10/15	25.0	25.0
K1508571-017	08/10/15	25.0	25.0
K1508571-018	08/10/15	25.0	25.0
KQ1508654-01	08/10/15	25.0	25.0
KQ1508654-02	08/10/15	25.0	25.0

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238

Project Name: XOM Raleigh/Almont Groundwater

Method: F

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1508571-001DISS	08/12/15	25.0	25.0
K1508571-002DISS	08/12/15	25.0	25.0
K1508571-003DISS	08/12/15	25.0	25.0
K1508571-004DISS	08/12/15	25.0	25.0
K1508571-004DISSD	08/12/15	25.0	25.0
K1508571-004DISSS	08/12/15	25.0	25.0
K1508571-005DISS	08/12/15	25.0	25.0
K1508571-006DISS	08/12/15	25.0	25.0
K1508571-007DISS	08/12/15	25.0	25.0
K1508571-008DISS	08/12/15	25.0	25.0
K1508571-009DISS	08/12/15	25.0	25.0
K1508571-010DISS	08/12/15	25.0	25.0
K1508571-011DISS	08/12/15	25.0	25.0
K1508571-012DISS	08/12/15	25.0	25.0
K1508571-013DISS	08/12/15	25.0	25.0
K1508571-014DISS	08/12/15	25.0	25.0
K1508571-015DISS	08/12/15	25.0	25.0
K1508571-016DISS	08/12/15	25.0	25.0
K1508571-017DISS	08/12/15	25.0	25.0
K1508571-018DISS	08/12/15	25.0	25.0
KQ1508657-01	08/12/15	25.0	25.0
KQ1508657-02	08/12/15	25.0	25.0

ALS Group USA, Corp.
dba ALS Environmental

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Run Number:** 081715-As1edited

Project Name: XOM Raleigh/Almont Groundwater

Instrument ID Number: K-FLAA-02 **Method:** H

Start Date: 08/17/15 **End Date:** 08/17/15

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CAL BLK	1.0	11:30				X																					
STD 0.5	1.0	11:32				X																					
STD 1.0	1.0	11:34				X																					
STD 5.0	1.0	11:36				X																					
STD 7.5	1.0	11:38				X																					
STD 10.0	1.0	11:41				X																					
ICV1	1.0	11:43				X																					
ICB1	1.0	11:45				X																					
LLICV	1.0	11:47				X																					
CCV1	1.0	11:49				X																					
CCB1	1.0	11:51				X																					
KQ1508654-01	2.0	11:54				X																					
ZZZZZZ	2.0	11:56																									
K1508571-001	2.0	11:58				X																					
ZZZZZZ	2.0	12:00																									
ZZZZZZ	2.0	12:02																									
K1508571-004	2.0	12:04				X																					
ZZZZZZ	2.0	12:07																									
K1508571-004D	2.0	12:09				X																					
K1508571-004S	2.0	12:11				X																					
K1508571-005	2.0	12:13				X																					
CCV2	1.0	12:15				X																					
CCB2	1.0	12:18				X																					
K1508571-006	2.0	12:20				X																					
ZZZZZZ	2.0	12:22																									
K1508571-008	2.0	12:24				X																					
K1508571-009	2.0	12:26				X																					
K1508571-010	1,000.0	12:28				X																					
ZZZZZZ	2.0	12:30																									
ZZZZZZ	2.0	12:33																									
ZZZZZZ	2.0	12:35																									
K1508571-014	2.0	12:37				X																					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

ALS Group USA, Corp.
dba ALS Environmental

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Run Number:** 081715-As1edited

Project Name: XOM Raleigh/Almont Groundwater

Instrument ID Number: K-FLAA-02 **Method:** H

Start Date: 08/17/15 **End Date:** 08/17/15

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	2.0	12:39																									
CCV3	1.0	12:41				X																					
CCB3	1.0	12:44				X																					
ZZZZZZ	2.0	12:46																									
K1508571-017	2.0	12:48				X																					
ZZZZZZ	2.0	12:50																									
ZZZZZZ	100.0	12:52																									
ZZZZZZ	2.0	12:55																									
KQ1508657-01	2.0	12:57				X																					
KQ1508657-02	2.0	12:59				X																					
K1508571-001	2.0	13:01				X																					
ZZZZZZ	2.0	13:03																									
ZZZZZZ	2.0	13:05																									
CCV4	1.0	13:07				X																					
CCB4	1.0	13:10				X																					
K1508571-004	2.0	13:12				X																					
ZZZZZZ	2.0	13:14																									
K1508571-004D	2.0	13:16				X																					
K1508571-004S	2.0	13:18				X																					
K1508571-005	2.0	13:20				X																					
K1508571-006	2.0	13:23				X																					
ZZZZZZ	2.0	13:25																									
K1508571-008	2.0	13:27				X																					
ZZZZZZ	2.0	13:29																									
K1508571-009	2.0	13:31				X																					
CCV5	1.0	13:34				X																					
CCB5	1.0	13:36				X																					
K1508571-010	1,000.0	13:38				X																					
ZZZZZZ	2.0	13:40																									
ZZZZZZ	2.0	13:42																									
ZZZZZZ	2.0	13:44																									
K1508571-014	2.0	13:46				X																					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

ALS Group USA, Corp.
dba ALS Environmental

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Run Number:** 081715-As1edited

Project Name: XOM Raleigh/Almont Groundwater

Instrument ID Number: K-FLAA-02 **Method:** H

Start Date: 08/17/15 **End Date:** 08/17/15

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
K1508571-015	2.0	13:49				X																					
ZZZZZZ	2.0	13:51																									
K1508571-017	2.0	13:53				X																					
ZZZZZZ	2.0	13:55																									
ZZZZZZ	2.0	13:57																									
CCV6	1.0	13:59				X																					
CCB6	1.0	14:02				X																					
ZZZZZZ	2.0	14:04																									
ZZZZZZ	2.0	14:06																									
ZZZZZZ	2.0	14:08																									
ZZZZZZ	2.0	14:10																									
ZZZZZZ	2.0	14:12																									
ZZZZZZ	2.0	14:15																									
ZZZZZZ	2.0	14:17																									
KQ1508654-02	2.0	14:19				X																					
K1508571-002	50.0	14:21				X																					
K1508571-003	10.0	14:23				X																					
CCV7	1.0	14:25				X																					
ZZZZZZ	1.0	14:27																									
CCB7	1.0	14:30				X																					
K1508571-007	20.0	14:32				X																					
ZZZZZZ	40.0	14:34																									
ZZZZZZ	40.0	14:36																									
K1508571-013	40.0	14:38				X																					
K1508571-015	4.0	14:40				X																					
K1508571-016	20.0	14:42				X																					
K1508571-018	10.0	14:45				X																					
K1508571-002	50.0	14:47				X																					
K1508571-003	10.0	14:49				X																					
K1508571-007	20.0	14:51				X																					
CCV8	1.0	14:53				X																					
CCB8	1.0	14:56				X																					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

ALS Group USA, Corp.
dba ALS Environmental

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1508571

Project No.: 49001238 **Run Number:** 081715-As1edited

Project Name: XOM Raleigh/Almont Groundwater

Instrument ID Number: K-FLAA-02 **Method:** H

Start Date: 08/17/15 **End Date:** 08/17/15

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	40.0	14:58																									
K1508571-012	40.0	15:00				X																					
K1508571-013	40.0	15:02				X																					
ZZZZZZ	4.0	15:04																									
K1508571-016	20.0	15:06				X																					
K1508571-018	10.0	15:08				X																					
ZZZZZZ	80.0	15:10																									
ZZZZZZ	80.0	15:13																									
ZZZZZZ	80.0	15:15																									
ZZZZZZ	80.0	15:17																									
CCV9	1.0	15:19				X																					
CCB9	1.0	15:21				X																					
ZZZZZZ	80.0	15:23																									
ZZZZZZ	2.0	15:26																									
K1508571-011	100.0	15:28				X																					
K1508571-012	100.0	15:30				X																					
K1508571-011	100.0	15:32				X																					
ZZZZZZ	200.0	15:34																									
ZZZZZZ	200.0	15:36																									
ZZZZZZ	200.0	15:38																									
ZZZZZZ	200.0	15:40																									
CCV10	1.0	15:43				X																					
CCB10	1.0	15:45				X																					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 242041
Team: Metals
Analyst: Anna Cheatley
Prep Workflow: MetDig3010A
Prep Method: EPA 3010A
Rush/NPDES: N/A
Status: Prepped
Current Step: Digestion
Prep Date: 08/10/2015 09:11
Due Date: 08/17/2015
Hold Date: 01/31/2016

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1508654-01	Method Blank		25 mL	25 mL			As T	6%HNO3,5%HCl
KQ1508654-02	Lab Control Sample		25 mL	25 mL	0.1 mL	83147	As T	6%HNO3,5%HCl
K1508571-001	AL-MW-04D	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-002	AL-MW-03D	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-003	AL-MW-02D	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-004	AL-MW-11D	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-004: KQ1508654-03	Duplicate	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-004: KQ1508654-04	Matrix Spike	.01	25 mL	25 mL	0.1 mL	81170	As T	6%HNO3,5%HCl
K1508571-005	AL-MW-11	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-006	AL-MW-06	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-007	AL-MW-07	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-008	AL-MW-05	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-009	AL-QAQC-DUP-01	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-010	AL-MW-04	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-011	AL-MW-03	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-012	AL-MW-02	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-013	AL-MW-09	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-014	AL-MW-10	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-015	AL-MW-08	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-016	AL-MW-01	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-017	AL-QAQC-EB-01	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508571-018	AL-MW-12	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508696-001	MW-1T (680-115335-1)	.01	25 mL	25 mL			As T	6%HNO3,5%HCl
K1508696-002	MW-2T (680-115335-7)	.01	25 mL	25 mL			As T	6%HNO3,5%HCl

24 Total Samples consisting of 20 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated

with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET GFLCSW	Spike	83147	12/1/2015	K-MET SS2	Spike	81170	9/1/2015

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	79485	Digestion	K-MET HNO3	80970
Digestion	K-MET HCL	80595			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-HotPlate-02	Corrected Temperature	96	deg C	Digestion	K-HotPlate-03	Observed Temperature	94	deg C
Digestion	K-HotPlate-02	Correction Factor	0	deg C	Digestion	K-HotPlate-03	Thermometer ID 1134442		deg C
Digestion	K-HotPlate-02	Observed Temperature	96	deg C	Digestion	K-HotPlate-06	Corrected Temperature	97	deg C
Digestion	K-HotPlate-02	Thermometer ID 1134195		deg C	Digestion	K-HotPlate-06	Correction Factor	0	deg C
Digestion	K-HotPlate-03	Corrected Temperature	94	deg C	Digestion	K-HotPlate-06	Observed Temperature	97	deg C
Digestion	K-HotPlate-03	Correction Factor	0	deg C	Digestion	K-HotPlate-06	Thermometer ID 1134275		deg C

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	10-AUG-15 09:11	10-AUG-15 12:09	Anna Cheatley		N	

Comments

Review

Reviewed by: _____ Date: 8/12/15

Preparation Information Benchsheet

Prep Run: 242042
Team: Metals
Analyst: Anna Cheatley
Prep Workflow: MetDig3010A
Prep Method: EPA 3010A
Rush/NPDES: N/A
Status: Prepped
Current Step: Digestion
Prep Date: 08/12/2015 08:49
Due Date: 08/23/2015
Hold Date: 01/31/2016

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1508657-01	Method Blank		25 mL	25 mL			As D	6%HNO3,5%HCl
KQ1508657-02	Lab Control Sample		25 mL	25 mL	0.1 mL	83147	As D	6%HNO3,5%HCl
K1508571-001	AL-MW-04D	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-002	AL-MW-03D	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-003	AL-MW-02D	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-004	AL-MW-11D	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-004: KQ1508657-03	Duplicate	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-004: KQ1508657-04	Matrix Spike	.02	25 mL	25 mL	0.1 mL	81170	As D	6%HNO3,5%HCl
K1508571-005	AL-MW-11	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-006	AL-MW-06	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-007	AL-MW-07	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-008	AL-MW-05	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-009	AL-QAQC-DUP-01	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-010	AL-MW-04	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-011	AL-MW-03	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-012	AL-MW-02	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-013	AL-MW-09	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-014	AL-MW-10	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-015	AL-MW-08	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-016	AL-MW-01	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-017	AL-QAQC-EB-01	.02	25 mL	25 mL			As D	6%HNO3,5%HCl
K1508571-018	AL-MW-12	.02	25 mL	25 mL			As D	6%HNO3,5%HCl

22 Total Samples consisting of 18 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET GFLCSW	Spike	83147	12/1/2015	K-MET SS2	Spike	81170	9/1/2015

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	79485	Digestion	K-MET HNO3	80970
Digestion	K-MET HCL	80595			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-HotPlate-02	Corrected Temperature	95	deg C	Digestion	K-HotPlate-03	Observed Temperature	97	deg C
Digestion	K-HotPlate-02	Correction Factor	0	deg C	Digestion	K-HotPlate-03	Thermometer ID 1134442		deg C
Digestion	K-HotPlate-02	Observed Temperature	95	deg C	Digestion	K-HotPlate-04	Corrected Temperture	97	deg C
Digestion	K-HotPlate-02	Thermometer ID 1134195		deg C	Digestion	K-HotPlate-04	Correction Factor	0	deg C
Digestion	K-HotPlate-03	Corrected Temperature	97	deg C	Digestion	K-HotPlate-04	Observed Temperature	97	deg C
Digestion	K-HotPlate-03	Correction Factor	0	deg C	Digestion	K-HotPlate-04	Thermometer ID 1135259		deg C

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	12-AUG-15 08:49	12-AUG-15 12:05	Anna Cheatley		N	

Comments

Review

Reviewed by: _____ Date: 8/12/15

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
*** Add after HNO3	Mn	100*	1000ml	50	
and before cas cal	Ni	100*	1000ml	50	
-14	Sb***	50	1000ml	50	
when making the	V	100*	1000ml	50	
solution	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	50.0	500ml	100	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	50	500ml	100	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	
K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-2	Sb	no dilution	-	500	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Element Analyzed: Se Hydride Instrument: K-FLAA-02
Service Request #: k1508571, k1508969, k1508743, k1508744

Batch QC SR's #: k1508571, k1508743
Calibration Std.: AA1-16-G Expiration Date: 10/01/15
2nd Source Std.: AA1-16-H Expiration Date: 02/05/16
Starlims #: 458128
Run #: 081715-As1

Hydride Data Review Form

		Yes	No	NA
1	ICV within 10% of true Value	X		
2.	Calibration data included	X		
3.	CCV's in control	X		
4.	CCB's and/or ICB's below MRL	X		
5.	All reported Results within Cal. Range	X		
6.	All Calculations are Correct	X		

Comments

Primary Reviewed by: JDB Date: 8/17/15

Secondary Reviewed by: [illegible] Date: 8/21/15

Data Review Form

Service Request #: **K1508571**
Instrument ID#: **K-FLAA-02**
DataFile Name: **R:\ICP\WIP\DATA\K-FLAA-02\081715-As1 Copy.csv**
RUNNO: **458128**

There are no issues to report.

Seq/Sample No. 88, 89, 90 were labelled incorrectly as K1508751 instead of K1508571. Lab Code labels are correct.

Primary Approver: JDB
Secondary Approver: JC

ALS Enviromental
FAA Run Log

Method: (Circle Method Used) 7742 7062 Other:_____ Element: As Se	**Service Request # :**

SAMPLE NUMBER	Dilution Factor	Measured (µg/L)	Recoveries (ICV, CCV, CRA, LCS, Matrix Spk.)		Comments Post Spike = 5 ppb
Cal. Blk	-	0.000			
Cal. Std 0.5	-	0.500	*(0.025-50ml)		*Cal. Std = AA1-16-G
Cal. Std 1.0	-	1.000	*(0.05-50ml)		
Cal. Std 5.0	-	5.000	*(0.25-50ml)		
Cal. Std 7.5	-	7.500	*(0.375-50ml)		
Cal. Std 10.0	-	10.000	*(0.5-50ml)		
ICV	-	7.767	104%		ICV Std = AA1-16-H
ICB	-	0.011			
LLICV	-	0.611	122%		
CCV	-	7.889	105%		
CCB	-	-0.004			
KQ1508654-01	1/2	0.047			
~~KQ1508654-02~~	~~1/2~~	~~6.313~~	~~126%~~		Rerun
K1508571-001 2	1/2	0.904			
~~K1508571-002 2~~	~~1/2~~	~~75.833~~			Needs Dilution
~~K1508571-003 2~~	~~1/2~~	~~18.681~~			Needs Dilution
K1508571-004 2	1/2	0.420			
~~K1508571-004A 2~~	~~1/2~~	~~5.768~~	~~115%~~		Not Needed
K1508571-004D 2	1/2	0.434			
K1508571-004S 2	1/2	9.155	114%		
K1508571-005 2	1/2	2.020			
CCV	-	7.890	105%		
CCB	-	0.003			
K1508571-006 2	1/2	7.102			
~~K1508571-007 2~~	~~1/2~~	~~32.906~~			Needs Dilution
K1508571-008 2	1/2	0.079			
K1508571-009 2	1/2	1.876			
K1508571-010 1000	1/2+1/500	4.860			
~~K1508571-011 2~~	~~1/2~~	~~81.655~~			Needs Dilution
~~K1508571-012 2~~	~~1/2~~	~~78.278~~			Needs Dilution

JB 8/17/15

JB 8/17/15

True Values/QC Limits:	LCSW	Water Spike	LCSS (ERA D045540)	Soil Spike
Arsenic:	10ppb (80-120%)	16ppb (75-125%)	99.6mg/kg (70-130%)	40ppb (75-125%)
Selenium	10ppb (80-120%)	16ppb (75-125%)	150mg/kg (68-132%)	40ppb (75-125%)

Cx = MSA Corrected Concentration (as per method)

Analyst	**Date:**	**Page Number:**
Josh D Bi[illegible]	8/17/15	1

R:\ICP\MISC\FLAA\Hydride Tissue Template

ALS Enviromental
FAA Run Log

Method: (Circle Method Used) 7742 7062 Other:_____ Element: As Se _____	**Service Request # :**

SAMPLE NUMBER	Dilution Factor	Measured (µg/L)	Recoveries (ICV, CCV, CRA, LCS, Matrix Spk.)		Comments Post Spike = 5 ppb
~~K1508571-013 2~~	~~1/2~~	~~61.373~~			Needs Dilution
K1508571-014 2	1/2	0.267			
~~K1508571-015 2~~	~~1/2~~	~~10.206~~			Needs Dilution
CCV	-	7.489	100%		
CCB	-	0.384			
~~K1508571-016 2~~	~~1/2~~	~~21.337~~			Needs Dilution
K1508571-017 2	1/2	-0.002			
~~K1508571-018 2~~	~~1/2~~	~~10.857~~			Needs Dilution
K1508696-001 100		4.669			
K1508696-002 2	1/2	1.149			
KQ1508657-01	1/2	-0.048			
KQ1508657-02	1/2	5.713	114%		
K1508571-001 2 DISS	1/2	0.837			
~~K1508571-002 2 DISS~~	~~1/2~~	~~75.938~~			Needs Dilution
~~K1508571-003 2 DISS~~	~~1/2~~	~~20.687~~			Needs Dilution
CCV	-	7.360	98%		
CCB	-	0.036			
K1508571-004 2 DISS	1/2	0.519			
~~K1508571-004A 2 DISS~~	~~1/2~~	~~6.820~~	~~126%~~		Not Needed
K1508571-004D 2 DISS	1/2	0.402			
K1508571-004S 2 DISS	1/2	9.860	117%		
K1508571-005 2 DISS	1/2	1.857			
K1508571-006 2 DISS	1/2	6.916			
~~K1508571-007 2 DISS~~	~~1/2~~	~~34.523~~			Needs Dilution
K1508571-008 2 DISS	1/2	0.081			
~~No Sample in Position.~~	~~1/2~~	~~1.194~~			
K1508571-009 2 DISS	1/2	2.131			
CCV	-	7.668	102%		
CCB	-	-0.047			
K1508571-010 1000 DISS	1/2+1/500	4.722			

JB 8/17/15

JB 8/17/15

True Values/QC Limits:	LCSW	Water Spike	LCSS (ERA D045540)	Soil Spike
Arsenic:	10ppb (80-120%)	16ppb (75-125%)	146.0mg/kg (80-120%)	20ppb (75-125%)
Selenium	10ppb (80-120%)	16ppb (75-125%)	192.0mg/kg (62-147%)	20ppb (75-125%)

Cx = MSA Corrected Concentration (as per method)

Analyst	**Date:**	**Page Number:**
[signature]	8/17/15	2

R:\ICP\MISC\FLAA\Hydride Tissue Template

ALS Enviromental
FAA Run Log

Method: (Circle Method Used) 7742 7062 Other:_____ Element: As Se	**Service Request # :**

SAMPLE NUMBER	Dilution Factor	Measured (µg/L)	Recoveries (ICV, CCV, CRA, LCS, Matrix Spk.)		Comments Post Spike = 5 ppb
~~K1508571-011 2 DISS~~	~~1/2~~	~~71.626~~			Needs Dilution
~~K1508571-012 2 DISS~~	~~1/2~~	~~79.739~~			Needs Dilution
~~K1508571-013 2 DISS~~	~~1/2~~	~~50.192~~			Needs Dilution
K1508571-014 2 DISS	1/2	0.228			
K1508571-015 2 DISS	1/2	8.411			
~~K1508571-016 2 DISS~~	~~1/2~~	~~18.288~~			Needs Dilution
K1508571-017 2 DISS	1/2	0.064			
~~K1508571-018 2 DISS~~	~~1/2~~	~~10.555~~			Needs Dilution
KQ1508823-01	1/2	-0.002			
CCV	-	8.211	109%		
CCB	-	0.058			
~~K1508743-001 2~~	~~1/2~~	~~92.322~~			Needs Dilution
~~K1508743-001A 2~~	~~1/2~~	~~87.446~~			Needs Dilution
~~K1508743-001D 2~~	~~1/2~~	~~14.534~~			Needs Dilution
~~K1508743-001S 2~~	~~1/2~~	~~9.316~~			Needs Dilution
~~K1508744-001 2~~	~~1/2~~	~~84.119~~			Needs Dilution
K1508744-002 2	1/2	3.124			
KQ1508823-02	1/2	4.851	97%		
KQ1508654-02	1/2	4.881	98%		
K1508571-002 50	1/2+1/25	7.623			
K1508571-003 10	1/2+1/5	4.571			
CCV	-	7.717	103%		
~~CCB~~	-	~~1.085~~			Rerun
CCB	-	-0.043			
K1508571-007 20	1/2+1/10	4.519			
~~K1508571-011 40~~	~~1/2+1/20~~	~~10.358~~			Needs Dilution
~~K1508571-012 40~~	~~1/2+1/20~~	~~10.554~~			Needs Dilution
K1508571-013 40	1/2+1/20	6.553			
K1508~~751~~-015 4	1/2+1/2	5.524			
K1508~~751~~-016 20	1/2+1/10	2.525			

JB 8/17/15

JB 8/17/15

True Values/QC Limits:	LCSW	Water Spike	LCSS (ERA D045540)	Soil Spike
Arsenic:	10ppb (80-120%)	16ppb (75-125%)	146.0mg/kg (80-120%)	20ppb (75-125%)
Selenium	10ppb (80-120%)	16ppb (75-125%)	192.0mg/kg (62-147%)	20ppb (75-125%)

Cx = MSA Corrected Concentration (as per method)

Analyst	**Date:**	**Page Number:**
Josh D Bailey	8/17/15	3

R:\ICP\MISC\FLAA\Hydride Tissue Template

ALS Enviromental
FAA Run Log

Method: (Circle Method Used) 7742 7062 Other:_____ Element: As Se	**Service Request # :**

SAMPLE NUMBER JB 8571	**Dilution Factor**	**Measured** (µg/L)	**Recoveries** (ICV, CCV, CRA, LCS, Matrix Spk.)		**Comments** Post Spike = 5 ppb
~~K1508751~~-018 10	1/2+1/5	2.473			
K1508571-002 50 DISS	1/2+1/25	7.260			
K1508571-003 10 DISS	1/2+1/5	4.392			
K1508571-007 20 DISS	1/2+1/10	4.363			
CCV	-	8.212	109%		
CCB	-	-0.071			
~~K1508571-011 40 DISS~~	~~1/2+1/20~~	~~10.448~~			Needs Dilution
K1508571-012 40 DISS	1/2+1/20	8.959			
K1508571-013 40 DISS	1/2+1/20	4.316			
~~K1508571-015 4 DISS~~	~~1/2+1/2~~	~~4.423~~			Not Needed
K1508571-016 20 DISS	1/2+1/10	2.241			
K1508571-018 10 DISS	1/2+1/5	2.241			
~~K1508743-001 80~~	~~1/2+1/40~~	~~9.611~~			Needs Dilution
~~K1508743-001A 80~~	~~1/2+1/40~~	~~15.015~~			Needs Dilution
~~K1508743-001D 80~~	~~1/2+1/40~~	~~9.491~~			Needs Dilution
~~K1508743-001S 80~~	~~1/2+1/40~~	~~9.889~~			Needs Dilution
CCV	-	7.586	101%		
CCB	-	-0.023			
K1508744-001 80	1/2+1/40	7.812			
~~K1508744-002 2~~	~~1/2~~	~~3.271~~			Not Needed
K1508571-011 100	1/2+1/50	3.981			
K1508571-012 100	1/2+1/50	3.916			
K1508571-011 100 DISS	1/2+1/50	3.971			
K1508743-001 200	1/2+1/100	4.113			
~~K1508743-001A 200~~	~~1/2+1/100~~	~~10.335~~			Not Needed
K1508743-001D 200	1/2+1/100	3.898			
K1508743-001S 200	1/2+1/100	4.060	-65%		Spike Level 4X
CCV	-	7.771	104%		
CCB	-	-0.003			

JB 8/17/15

JB 8/17/15

True Values/QC Limits:	LCSW	Water Spike	LCSS (ERA D045540)	Soil Spike
Arsenic:	10ppb (80-120%)	16ppb (75-125%)	146.0mg/kg (80-120%)	20ppb (75-125%)
Selenium	10ppb (80-120%)	16ppb (75-125%)	192.0mg/kg (62-147%)	20ppb (75-125%)

Cx = MSA Corrected Concentration (as per method)

Analyst	**Date:**	**Page Number:**
[signature]	8/17/15	4

R:\ICP\MISC\FLAA\Hydride Tissue Template

==========

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: Std 7.5 **Date Collected: 8/17/2015 11:37:30 AM**
Analyst: **Data Type: Original**

Replicate Data: Std 7.5

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1		[7.5]	0.141	0.349	0.144			11:37:53	Yes
2		[7.5]	0.143	0.383	0.146			11:38:24	Yes
3		[7.5]	0.148	0.374	0.151			11:38:54	Yes
Mean:		[7.5]	0.144						
SD:		0.0	0.0039						
%RSD:		0.0	2.69						

Standard number 4 applied. [7.5]
Correlation Coef.: 0.997877 Slope: 0.01977 Intercept: 0.00000

==========

Sequence No.: 6 **Autosampler Location: 6**
Sample ID: Std 10.0 **Date Collected: 8/17/2015 11:39:42 AM**
Analyst: **Data Type: Original**

Replicate Data: Std 10.0

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1		[10.0]	0.184	0.501	0.186			11:40:06	Yes
2		[10.0]	0.184	0.505	0.187			11:40:36	Yes
3		[10.0]	0.189	0.522	0.191			11:41:07	Yes
Mean:		[10.0]	0.185						
SD:		0.0	0.0027						
%RSD:		0.0	1.47						

Standard number 5 applied. [10.0]
Correlation Coef.: 0.997561 Slope: 0.01912 Intercept: 0.00000
The calibration curve may not be linear.

Calibration data for As 193.70 **Equation: Linear Through Zero**

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
Cal blk	0.0000	0	0.000	0.00	7.2
Std 0.5	0.0110	0.5	0.577	0.00	7.3
Std 1.0	0.0231	1.0	1.206	0.00	4.8
Std 5.0	0.1039	5.0	5.434	0.00	3.4
Std 7.5	0.1440	7.5	7.534	0.00	2.7
Std 10.0	0.1855	10.0	9.700	0.00	1.5

Correlation Coef.: 0.997561 Slope: 0.01912 Intercept: 0.00000

==========

Sequence No.: 7 **Autosampler Location: 7**
Sample ID: ICV **Date Collected: 8/17/2015 11:41:55 AM**
Analyst: **Data Type: Original**

Replicate Data: ICV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.651	7.651	0.146	0.397	0.149			11:42:18	Yes
2	7.755	7.755	0.148	0.392	0.151			11:42:49	Yes
3	7.894	7.894	0.151	0.407	0.154			11:43:20	Yes
Mean:	7.767	7.767	0.148						
SD:	0.122	0.122	0.0023						
%RSD:	1.573	1.573	1.57						

QC value within limits for As 193.70 Recovery = 103.56%
All analyte(s) passed QC.

==========

Sequence No.: 8 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 8/17/2015 11:44:08 AM**
Analyst: **Data Type: Original**

Replicate Data: ICB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.011	0.011	0.000	0.002	0.003			11:44:29	Yes
2	0.014	0.014	0.000	0.007	0.003			11:45:00	Yes
3	0.008	0.008	0.000	0.003	0.003			11:45:30	Yes
Mean:	0.011	0.011	0.000						
SD:	0.003	0.003	0.0001						
%RSD:	29.70	29.70	29.70						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

==========

Sequence No.: 9 **Autosampler Location: 2**
Sample ID: LLICV **Date Collected: 8/17/2015 11:46:15 AM**
Analyst: **Data Type: Original**

Replicate Data: LLICV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.577	0.577	0.011	0.041	0.014			11:46:37	Yes
2	0.603	0.603	0.012	0.042	0.014			11:47:08	Yes
3	0.654	0.654	0.012	0.051	0.015			11:47:39	Yes
Mean:	0.611	0.611	0.012						
SD:	0.039	0.039	0.0008						
%RSD:	6.421	6.421	6.42						

QC value within limits for As 193.70 Recovery = 122.20%
All analyte(s) passed QC.

==========

Sequence No.: 10 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 11:48:25 AM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	8.019	8.019	0.153	0.388	0.156			11:48:48	Yes
2	7.739	7.739	0.148	0.364	0.151			11:49:18	Yes
3	7.910	7.910	0.151	0.384	0.154			11:49:48	Yes
Mean:	7.889	7.889	0.151						
SD:	0.141	0.141	0.0027						
%RSD:	1.792	1.792	1.79						

QC value within limits for As 193.70 Recovery = 105.19%
All analyte(s) passed QC.

==========

Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 11:50:36 AM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.022	0.022	0.000	0.011	0.003			11:50:57	Yes
2	-0.009	-0.009	-0.000	0.002	0.003			11:51:27	Yes
3	-0.026	-0.026	-0.000	0.009	0.002			11:51:58	Yes

Mean:	-0.004	-0.004	-0.000
SD:	0.024	0.024	0.0005
%RSD:	558.6	558.6	558.61

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 12 **Autosampler Location: 9**
Sample ID: KQ1508654-01 **Date Collected: 8/17/2015 11:52:44 AM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508654-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.125	0.125	0.002	0.012	0.005			11:53:05	Yes
2	0.011	0.011	0.000	0.005	0.003			11:53:35	Yes
3	0.005	0.005	0.000	0.005	0.003			11:54:06	Yes
Mean:	0.047	0.047	0.001						
SD:	0.068	0.068	0.0013						
%RSD:	144.4	144.4	144.39						

Sequence No.: 13 **Autosampler Location: 10**
Sample ID: KQ1508654-02 **Date Collected: 8/17/2015 11:54:51 AM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508654-02

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	6.232	6.232	0.119	0.320	0.122			11:55:13	Yes
2	6.386	6.386	0.122	0.318	0.125			11:55:43	Yes
3	6.320	6.320	0.121	0.332	0.124			11:56:14	Yes
Mean:	6.313	6.313	0.121						
SD:	0.077	0.077	0.0015						
%RSD:	1.224	1.224	1.22						

Sequence No.: 14 **Autosampler Location: 11**
Sample ID: K1508571-001 2 **Date Collected: 8/17/2015 11:57:00 AM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-001 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.919	0.919	0.018	0.059	0.020			11:57:22	Yes
2	0.887	0.887	0.017	0.064	0.020			11:57:53	Yes
3	0.907	0.907	0.017	0.063	0.020			11:58:24	Yes
Mean:	0.904	0.904	0.017						
SD:	0.016	0.016	0.0003						
%RSD:	1.747	1.747	1.75						

Sequence No.: 15 **Autosampler Location: 12**
Sample ID: K1508571-002 2 **Date Collected: 8/17/2015 11:59:10 AM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-002 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	79.34	79.34	1.517	4.594	1.520			11:59:32	Yes
	Sample concentration is greater than that of the highest standard.								
2	73.26	73.26	1.401	4.204	1.404			12:00:03	Yes
	Sample concentration is greater than that of the highest standard.								

JB 8/17/15

3	74.90	74.90	1.432	4.471	1.435		12:00:34	Yes
Sample concentration is greater than that of the highest standard.								
Mean:	75.83	75.83	1.450					
SD:	3.142	3.142	0.0601					
%RSD:	4.144	4.144	4.14					
Sample concentration is greater than that of the highest standard.								

Sequence No.: 16 **Autosampler Location: 13**
Sample ID: K1508571-003 2 **Date Collected: 8/17/2015 12:01:21 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-003 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	18.22	18.22	0.348	0.910	0.351			12:01:43	Yes
Sample concentration is greater than that of the highest standard.									
2	18.88	18.88	0.361	0.936	0.364			12:02:14	Yes
Sample concentration is greater than that of the highest standard.									
3	18.94	18.94	0.362	0.923	0.365			12:02:44	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	18.68	18.68	0.357						
SD:	0.398	0.398	0.0076						
%RSD:	2.133	2.133	2.13						
Sample concentration is greater than that of the highest standard.									

JS 8/17/15

Sequence No.: 17 **Autosampler Location: 14**
Sample ID: K1508571-004 2 **Date Collected: 8/17/2015 12:03:32 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.354	0.354	0.007	0.005	0.010			12:03:55	Yes
2	0.476	0.476	0.009	0.029	0.012			12:04:25	Yes
3	0.430	0.430	0.008	0.013	0.011			12:04:56	Yes
Mean:	0.420	0.420	0.008						
SD:	0.062	0.062	0.0012						
%RSD:	14.70	14.70	14.70						

Sequence No.: 18 **Autosampler Location: 15**
Sample ID: K1508571-004A 2 **Date Collected: 8/17/2015 12:05:44 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004A 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	5.885	5.885	0.113	0.281	0.115			12:06:08	Yes
2	5.777	5.777	0.110	0.294	0.113			12:06:38	Yes
3	5.642	5.642	0.108	0.279	0.111			12:07:09	Yes
Mean:	5.768	5.768	0.110						
SD:	0.122	0.122	0.0023						
%RSD:	2.116	2.116	2.12						

Sequence No.: 19 **Autosampler Location: 16**
Sample ID: K1508571-004D 2 **Date Collected: 8/17/2015 12:07:57 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004D 2

Repl	SampleConc	StndConc	BlnkCorr	Peak	Peak	Bkgnd	Bkgnd	Time	Peak

#	ug/L	ug/L	Signal	Area	Height	Area	Height		Stored
1	0.457	0.457	0.009	0.054	0.012			12:08:22	Yes
2	0.411	0.411	0.008	0.018	0.011			12:08:52	Yes
3	0.434	0.434	0.008	0.027	0.011			12:09:23	Yes
Mean:	0.434	0.434	0.008						
SD:	0.023	0.023	0.0004						
%RSD:	5.284	5.284	5.28						

==========

Sequence No.: 20 **Autosampler Location: 17**
Sample ID: K1508571-004S 2 **Date Collected: 8/17/2015 12:10:12 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004S 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	8.935	8.935	0.171	0.454	0.174			12:10:32	Yes
2	9.014	9.014	0.172	0.453	0.175			12:11:03	Yes
3	9.514	9.514	0.182	0.465	0.185			12:11:34	Yes
Mean:	9.155	9.155	0.175						
SD:	0.314	0.314	0.0060						
%RSD:	3.433	3.433	3.43						

==========

Sequence No.: 21 **Autosampler Location: 18**
Sample ID: K1508571-005 2 **Date Collected: 8/17/2015 12:12:19 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-005 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.078	2.078	0.040	0.116	0.043			12:12:40	Yes
2	2.012	2.012	0.038	0.108	0.041			12:13:10	Yes
3	1.971	1.971	0.038	0.106	0.040			12:13:41	Yes
Mean:	2.020	2.020	0.039						
SD:	0.054	0.054	0.0010						
%RSD:	2.678	2.678	2.68						

==========

Sequence No.: 22 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 12:14:27 PM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.714	7.714	0.147	0.381	0.150			12:14:50	Yes
2	8.117	8.117	0.155	0.384	0.158			12:15:21	Yes
3	7.837	7.837	0.150	0.397	0.153			12:15:51	Yes
Mean:	7.890	7.890	0.151						
SD:	0.206	0.206	0.0039						
%RSD:	2.615	2.615	2.62						

QC value within limits for As 193.70 Recovery = 105.19%
All analyte(s) passed QC.

==========

Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 12:16:39 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored

1	0.042	0.042	0.001	0.009	0.004	12:16:59	Yes
2	-0.014	-0.014	-0.000	0.001	0.003	12:17:30	Yes
3	-0.018	-0.018	-0.000	-0.005	0.002	12:18:01	Yes
Mean:	0.003	0.003	0.000				
SD:	0.033	0.033	0.0006				
%RSD:	>999.9%	>999.9%	>999.9%				

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 19**
Sample ID: K1508571-006 2 **Date Collected: 8/17/2015 12:18:46 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-006 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	6.839	6.839	0.131	0.346	0.134			12:19:07	Yes
2	7.358	7.358	0.141	0.364	0.143			12:19:38	Yes
3	7.108	7.108	0.136	0.352	0.139			12:20:09	Yes
Mean:	7.102	7.102	0.136						
SD:	0.260	0.260	0.0050						
%RSD:	3.657	3.657	3.66						

Sequence No.: 25 **Autosampler Location: 20**
Sample ID: K1508571-007 2 **Date Collected: 8/17/2015 12:20:55 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-007 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	32.17	32.17	0.615	1.736	0.618			12:21:16	Yes
Sample concentration is greater than that of the highest standard.									
2	32.44	32.44	0.620	1.707	0.623			12:21:47	Yes
Sample concentration is greater than that of the highest standard.									
3	34.11	34.11	0.652	1.722	0.655			12:22:17	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	32.91	32.91	0.629						
SD:	1.051	1.051	0.0201						
%RSD:	3.194	3.194	3.19						
Sample concentration is greater than that of the highest standard.									

JS 8/27/15

Sequence No.: 26 **Autosampler Location: 21**
Sample ID: K1508571-008 2 **Date Collected: 8/17/2015 12:23:03 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-008 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.087	0.087	0.002	0.008	0.004			12:23:24	Yes
2	0.113	0.113	0.002	0.011	0.005			12:23:55	Yes
3	0.036	0.036	0.001	0.006	0.003			12:24:26	Yes
Mean:	0.079	0.079	0.002						
SD:	0.039	0.039	0.0008						
%RSD:	49.93	49.93	49.93						

Sequence No.: 27 **Autosampler Location: 22**
Sample ID: K1508571-009 2 **Date Collected: 8/17/2015 12:25:12 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-009 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.925	1.925	0.037	0.109	0.040			12:25:34	Yes
2	1.873	1.873	0.036	0.113	0.039			12:26:05	Yes
3	1.831	1.831	0.035	0.107	0.038			12:26:36	Yes
Mean:	1.876	1.876	0.036						
SD:	0.047	0.047	0.0009						
%RSD:	2.491	2.491	2.49						

==========

Sequence No.: 28 Autosampler Location: 23
Sample ID: K1508571-010 1000 Date Collected: 8/17/2015 12:27:23 PM
Analyst: Data Type: Original

Replicate Data: K1508571-010 1000

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.866	4.866	0.093	0.275	0.096			12:27:44	Yes
2	4.984	4.984	0.095	0.260	0.098			12:28:15	Yes
3	4.729	4.729	0.090	0.247	0.093			12:28:46	Yes
Mean:	4.860	4.860	0.093						
SD:	0.128	0.128	0.0024						
%RSD:	2.624	2.624	2.62						

==========

Sequence No.: 29 Autosampler Location: 24
Sample ID: K1508571-011 2 Date Collected: 8/17/2015 12:29:32 PM
Analyst: Data Type: Original

Replicate Data: K1508571-011 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	83.30	83.30	1.593	4.790	1.595			12:29:55	Yes
Sample concentration is greater than that of the highest standard.									
2	80.03	80.03	1.530	4.739	1.533			12:30:26	Yes
Sample concentration is greater than that of the highest standard.									
3	81.64	81.64	1.561	4.734	1.564			12:30:57	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	81.66	81.66	1.561						
SD:	1.637	1.637	0.0313						
%RSD:	2.005	2.005	2.01						
Sample concentration is greater than that of the highest standard.									

==========

Sequence No.: 30 Autosampler Location: 25
Sample ID: K1508571-012 2 Date Collected: 8/17/2015 12:31:44 PM
Analyst: Data Type: Original

Replicate Data: K1508571-012 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	82.28	82.28	1.573	4.814	1.576			12:32:06	Yes
Sample concentration is greater than that of the highest standard.									
2	74.83	74.83	1.431	4.660	1.434			12:32:36	Yes
Sample concentration is greater than that of the highest standard.									
3	77.72	77.72	1.486	4.776	1.489			12:33:07	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	78.28	78.28	1.497						
SD:	3.756	3.756	0.0718						
%RSD:	4.798	4.798	4.80						
Sample concentration is greater than that of the highest standard.									

JD 8/17/15

==========

Sequence No.: 31
Sample ID: K1508571-013 2
Analyst:

Autosampler Location: 26
Date Collected: 8/17/2015 12:33:54 PM
Data Type: Original

Replicate Data: K1508571-013 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	60.45	60.45	1.156	3.737	1.158			12:34:17	Yes
Sample concentration is greater than that of the highest standard.									
2	60.67	60.67	1.160	3.789	1.163			12:34:48	Yes
Sample concentration is greater than that of the highest standard.									
3	63.00	63.00	1.205	3.826	1.207			12:35:19	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	61.37	61.37	1.173						
SD:	1.413	1.413	0.0270						
%RSD:	2.302	2.302	2.30						
Sample concentration is greater than that of the highest standard.									

JB 8/17/15

Sequence No.: 32
Sample ID: K1508571-014 2
Analyst:

Autosampler Location: 27
Date Collected: 8/17/2015 12:36:06 PM
Data Type: Original

Replicate Data: K1508571-014 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.338	0.338	0.006	0.019	0.009			12:36:29	Yes
2	0.273	0.273	0.005	0.010	0.008			12:37:00	Yes
3	0.188	0.188	0.004	-0.002	0.006			12:37:31	Yes
Mean:	0.267	0.267	0.005						
SD:	0.075	0.075	0.0014						
%RSD:	28.15	28.15	28.15						

Sequence No.: 33
Sample ID: K1508571-015 2
Analyst:

Autosampler Location: 28
Date Collected: 8/17/2015 12:38:18 PM
Data Type: Original

Replicate Data: K1508571-015 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.03	10.03	0.192	0.563	0.195			12:38:41	Yes
2	10.60	10.60	0.203	0.586	0.206			12:39:12	Yes
3	9.981	9.981	0.191	0.565	0.194			12:39:42	Yes
Mean:	10.21	10.21	0.195						
SD:	0.345	0.345	0.0066						
%RSD:	3.381	3.381	3.38						

Sequence No.: 34
Sample ID: CCV
Analyst:

Autosampler Location: 5
Date Collected: 8/17/2015 12:40:30 PM
Data Type: Original

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.555	7.555	0.144	0.384	0.147			12:40:53	Yes
2	7.561	7.561	0.145	0.394	0.147			12:41:24	Yes
3	7.351	7.351	0.141	0.398	0.143			12:41:55	Yes
Mean:	7.489	7.489	0.143						
SD:	0.120	0.120	0.0023						
%RSD:	1.601	1.601	1.60						

QC value within limits for As 193.70 Recovery = 99.85%

All analyte(s) passed QC.

Sequence No.: 35 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 12:42:42 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.156	1.156	0.022	0.112	0.025			12:43:03	Yes
2	-0.014	-0.014	-0.000	-0.016	0.003			12:43:34	Yes
3	0.011	0.011	0.000	0.000	0.003			12:44:05	Yes
Mean:	0.384	0.384	0.007						
SD:	0.669	0.669	0.0128						
%RSD:	174.0	174.0	173.99						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 36 **Autosampler Location: 29**
Sample ID: K1508571-016 2 **Date Collected: 8/17/2015 12:44:50 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-016 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	20.83	20.83	0.398	1.169	0.401			12:45:14	Yes
Sample concentration is greater than that of the highest standard.									
2	22.67	22.67	0.433	1.191	0.436			12:45:45	Yes
Sample concentration is greater than that of the highest standard.									
3	20.51	20.51	0.392	1.168	0.395			12:46:16	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	21.34	21.34	0.408						
SD:	1.167	1.167	0.0223						
%RSD:	5.471	5.471	5.47						

Sample concentration is greater than that of the highest standard. JS 8/17/15

Sequence No.: 37 **Autosampler Location: 30**
Sample ID: K1508571-017 2 **Date Collected: 8/17/2015 12:47:04 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-017 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.029	0.029	0.001	0.007	0.003			12:47:28	Yes
2	-0.023	-0.023	-0.000	-0.004	0.002			12:47:58	Yes
3	-0.013	-0.013	-0.000	0.007	0.003			12:48:29	Yes
Mean:	-0.002	-0.002	-0.000						
SD:	0.028	0.028	0.0005						
%RSD:	>999.9%	>999.9%	>999.9%						

Sequence No.: 38 **Autosampler Location: 31**
Sample ID: K1508571-018 2 **Date Collected: 8/17/2015 12:49:17 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-018 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	11.40	11.40	0.218	0.536	0.221			12:49:41	Yes

Sample concentration is greater than that of the highest standard.

2	11.11	11.11	0.213	0.554	0.215	12:50:12	Yes
Sample concentration is greater than that of the highest standard.							
3	10.06	10.06	0.192	0.536	0.195	12:50:43	Yes
Mean:	10.86	10.86	0.208				
SD:	0.707	0.707	0.0135				
%RSD:	6.509	6.509	6.51				

JB 8/17/15

==========

Sequence No.: 39 **Autosampler Location: 32**
Sample ID: K1508696-001 100 **Date Collected: 8/17/2015 12:51:31 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508696-001 100

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.838	4.838	0.093	0.265	0.095			12:51:51	Yes
2	4.708	4.708	0.090	0.246	0.093			12:52:22	Yes
3	4.461	4.461	0.085	0.265	0.088			12:52:52	Yes
Mean:	4.669	4.669	0.089						
SD:	0.191	0.191	0.0037						
%RSD:	4.097	4.097	4.10						

==========

Sequence No.: 40 **Autosampler Location: 33**
Sample ID: K1508696-002 2 **Date Collected: 8/17/2015 12:53:37 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508696-002 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.167	1.167	0.022	0.069	0.025			12:53:59	Yes
2	1.179	1.179	0.023	0.059	0.025			12:54:30	Yes
3	1.103	1.103	0.021	0.060	0.024			12:55:01	Yes
Mean:	1.149	1.149	0.022						
SD:	0.041	0.041	0.0008						
%RSD:	3.553	3.553	3.55						

==========

Sequence No.: 41 **Autosampler Location: 34**
Sample ID: KQ1508657-01 **Date Collected: 8/17/2015 12:55:46 PM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508657-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.042	-0.042	-0.001	-0.003	0.002			12:56:07	Yes
2	-0.042	-0.042	-0.001	-0.005	0.002			12:56:37	Yes
3	-0.059	-0.059	-0.001	-0.006	0.002			12:57:08	Yes
Mean:	-0.048	-0.048	-0.001						
SD:	0.009	0.009	0.0002						
%RSD:	19.87	19.87	19.87						

==========

Sequence No.: 42 **Autosampler Location: 35**
Sample ID: KQ1508657-02 **Date Collected: 8/17/2015 12:57:53 PM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508657-02

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	5.469	5.469	0.105	0.287	0.107			12:58:14	Yes
2	5.812	5.812	0.111	0.304	0.114			12:58:45	Yes
3	5.858	5.858	0.112	0.294	0.115			12:59:15	Yes

Mean:	5.713	5.713	0.109
SD:	0.212	0.212	0.0041
%RSD:	3.715	3.715	3.72

Sequence No.: 43 **Autosampler Location: 36**
Sample ID: K1508571-001 2 DISS **Date Collected: 8/17/2015 1:00:01 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-001 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.913	0.913	0.017	0.053	0.020			13:00:22	Yes
2	0.820	0.820	0.016	0.052	0.018			13:00:53	Yes
3	0.780	0.780	0.015	0.055	0.018			13:01:24	Yes
Mean:	0.837	0.837	0.016						
SD:	0.068	0.068	0.0013						
%RSD:	8.158	8.158	8.16						

Sequence No.: 44 **Autosampler Location: 37**
Sample ID: K1508571-002 2 DISS **Date Collected: 8/17/2015 1:02:10 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-002 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	73.33	73.33	1.402	4.615	1.405			13:02:31	Yes
Sample concentration is greater than that of the highest standard.									
2	75.59	75.59	1.445	4.674	1.448			13:03:02	Yes
Sample concentration is greater than that of the highest standard.									
3	78.89	78.89	1.508	4.698	1.511			13:03:33	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	75.94	75.94	1.452						
SD:	2.797	2.797	0.0535						
%RSD:	3.683	3.683	3.68						
Sample concentration is greater than that of the highest standard.									

Sequence No.: 45 **Autosampler Location: 38**
Sample ID: K1508571-003 2 DISS **Date Collected: 8/17/2015 1:04:19 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-003 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	21.38	21.38	0.409	1.042	0.412			13:04:40	Yes
Sample concentration is greater than that of the highest standard.									
2	19.46	19.46	0.372	1.060	0.375			13:05:11	Yes
Sample concentration is greater than that of the highest standard.									
3	21.21	21.21	0.406	1.028	0.408			13:05:42	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	20.69	20.69	0.396						
SD:	1.063	1.063	0.0203						
%RSD:	5.137	5.137	5.14						
Sample concentration is greater than that of the highest standard.									

JB 8/17/15

Sequence No.: 46 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 1:06:28 PM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.350	7.350	0.141	0.385	0.143			13:06:51	Yes
2	7.300	7.300	0.140	0.380	0.142			13:07:22	Yes
3	7.432	7.432	0.142	0.405	0.145			13:07:52	Yes
Mean:	7.360	7.360	0.141						
SD:	0.067	0.067	0.0013						
%RSD:	0.907	0.907	0.91						

QC value within limits for As 193.70 Recovery = 98.14%
All analyte(s) passed QC.

Sequence No.: 47 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 1:08:39 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.070	0.070	0.001	0.004	0.004			13:09:00	Yes
2	0.009	0.009	0.000	-0.001	0.003			13:09:31	Yes
3	0.029	0.029	0.001	0.009	0.003			13:10:02	Yes
Mean:	0.036	0.036	0.001						
SD:	0.031	0.031	0.0006						
%RSD:	86.66	86.66	86.66						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 48 **Autosampler Location: 39**
Sample ID: K1508571-004 2 DISS **Date Collected: 8/17/2015 1:10:47 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.544	0.544	0.010	0.032	0.013			13:11:09	Yes
2	0.451	0.451	0.009	0.033	0.011			13:11:39	Yes
3	0.562	0.562	0.011	0.034	0.014			13:12:10	Yes
Mean:	0.519	0.519	0.010						
SD:	0.060	0.060	0.0011						
%RSD:	11.49	11.49	11.49						

Sequence No.: 49 **Autosampler Location: 40**
Sample ID: K1508571-004A 2 DISS **Date Collected: 8/17/2015 1:12:57 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004A 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	6.480	6.480	0.124	0.364	0.127			13:13:19	Yes
2	7.219	7.219	0.138	0.390	0.141			13:13:50	Yes
3	6.761	6.761	0.129	0.368	0.132			13:14:21	Yes
Mean:	6.820	6.820	0.130						
SD:	0.373	0.373	0.0071						
%RSD:	5.466	5.466	5.47						

Sequence No.: 50 **Autosampler Location: 41**
Sample ID: K1508571-004D 2 DISS **Date Collected: 8/17/2015 1:15:08 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-004D 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.413	0.413	0.008	0.018	0.011			13:15:30	Yes
2	0.364	0.364	0.007	0.023	0.010			13:16:00	Yes
3	0.428	0.428	0.008	0.038	0.011			13:16:31	Yes
Mean:	0.402	0.402	0.008						
SD:	0.034	0.034	0.0006						
%RSD:	8.414	8.414	8.41						

==========

Sequence No.: 51 Autosampler Location: 42
Sample ID: K1508571-004S 2 DISS Date Collected: 8/17/2015 1:17:18 PM
Analyst: Data Type: Original

Replicate Data: K1508571-004S 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	11.06	11.06	0.212	0.549	0.214			13:17:40	Yes
Sample concentration is greater than that of the highest standard.									
2	8.877	8.877	0.170	0.198	0.173			13:18:11	Yes
Changing BOC									
3	9.641	9.641	0.184	0.499	0.187			13:18:41	Yes
Mean:	9.860	9.860	0.189						
SD:	1.109	1.109	0.0212						
%RSD:	11.25	11.25	11.25						
Changing BOC									

==========

Sequence No.: 52 Autosampler Location: 43
Sample ID: K1508571-005 2 DISS Date Collected: 8/17/2015 1:19:29 PM
Analyst: Data Type: Original

Replicate Data: K1508571-005 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.928	1.928	0.037	0.082	0.040			13:19:52	Yes
2	1.844	1.844	0.035	0.104	0.038			13:20:23	Yes
3	1.801	1.801	0.034	0.099	0.037			13:20:54	Yes
Mean:	1.857	1.857	0.036						
SD:	0.065	0.065	0.0012						
%RSD:	3.484	3.484	3.48						

==========

Sequence No.: 53 Autosampler Location: 44
Sample ID: K1508571-006 2 DISS Date Collected: 8/17/2015 1:21:42 PM
Analyst: Data Type: Original

Replicate Data: K1508571-006 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	6.433	6.433	0.123	0.354	0.126			13:22:05	Yes
2	6.892	6.892	0.132	0.363	0.135			13:22:36	Yes
3	7.422	7.422	0.142	0.385	0.145			13:23:07	Yes
Mean:	6.916	6.916	0.132						
SD:	0.495	0.495	0.0095						
%RSD:	7.154	7.154	7.15						

==========

Sequence No.: 54 Autosampler Location: 45
Sample ID: K1508571-007 2 DISS Date Collected: 8/17/2015 1:23:54 PM
Analyst: Data Type: Original

Replicate Data: K1508571-007 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	34.29	34.29	0.656	1.852	0.658			13:24:17	Yes
Sample concentration is greater than that of the highest standard.									
2	33.02	33.02	0.631	1.816	0.634			13:24:48	Yes
Sample concentration is greater than that of the highest standard.									
3	36.25	36.25	0.693	1.860	0.696			13:25:18	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	34.52	34.52	0.660						
SD:	1.625	1.625	0.0311						
%RSD:	4.707	4.707	4.71						
Sample concentration is greater than that of the highest standard.									

JB 8/17/15

Sequence No.: 55
Sample ID: K1508571-008 2 DISS
Analyst:
Autosampler Location: 46
Date Collected: 8/17/2015 1:26:06 PM
Data Type: Original

Replicate Data: K1508571-008 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.069	0.069	0.001	0.004	0.004			13:26:30	Yes
2	0.058	0.058	0.001	0.012	0.004			13:27:00	Yes
3	0.116	0.116	0.002	0.009	0.005			13:27:31	Yes
Mean:	0.081	0.081	0.002						
SD:	0.031	0.031	0.0006						
%RSD:	37.84	37.84	37.84						

Sequence No.: 56
Sample ID: K1508571-009 2 DISS
Analyst:
Autosampler Location: 47
Date Collected: 8/17/2015 1:28:19 PM
Data Type: Original

Replicate Data: K1508571-009 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.190	1.190	0.023	0.024	0.026			13:28:43	Yes
2	1.310	1.310	0.025	0.049	0.028			13:29:13	Yes
3	1.081	1.081	0.021	0.029	0.023			13:29:44	Yes
Mean:	1.194	1.194	0.023						
SD:	0.115	0.115	0.0022						
%RSD:	9.617	9.617	9.62						

Sequence No.: 57
Sample ID: ~~K1508571-010 1000 DISS~~ JB
Analyst: K1508571-009 2 DISS
Autosampler Location: 48
Date Collected: 8/17/2015 1:30:32 PM
Data Type: Original

Replicate Data: K1508571-010 1000 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.931	1.931	0.037	0.119	0.040			13:30:52	Yes
2	2.110	2.110	0.040	0.131	0.043			13:31:22	Yes
3	2.353	2.353	0.045	0.129	0.048			13:31:53	Yes
Mean:	2.131	2.131	0.041						
SD:	0.211	0.211	0.0040						
%RSD:	9.915	9.915	9.91						

Sequence No.: 58
Sample ID: CCV
Analyst:
Autosampler Location: 5
Date Collected: 8/17/2015 1:32:38 PM
Data Type: Original

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.308	7.308	0.140	0.387	0.143			13:33:01	Yes
2	7.641	7.641	0.146	0.396	0.149			13:33:31	Yes
3	8.055	8.055	0.154	0.535	0.157			13:34:02	Yes
Mean:	7.668	7.668	0.147						
SD:	0.374	0.374	0.0071						
%RSD:	4.876	4.876	4.88						

QC value within limits for As 193.70 Recovery = 102.24%
All analyte(s) passed QC.

Sequence No.: 59 — **Autosampler Location: 1**
Sample ID: CCB — **Date Collected: 8/17/2015 1:34:49 PM**
Analyst: — **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.033	-0.033	-0.001	-0.010	0.002			13:35:10	Yes
2	-0.047	-0.047	-0.001	-0.007	0.002			13:35:41	Yes
3	-0.061	-0.061	-0.001	-0.017	0.002			13:36:12	Yes
Mean:	-0.047	-0.047	-0.001						
SD:	0.014	0.014	0.0003						
%RSD:	30.29	30.29	30.29						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 60 — **Autosampler Location: 49**
Sample ID: K1508571-~~011~~ 2 DISS — **Date Collected: 8/17/2015 1:36:57 PM**
Analyst: -010 — **Data Type: Original**

Replicate Data: K1508571-011 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.413	4.413	0.084	0.245	0.087			13:37:18	Yes
2	4.800	4.800	0.092	0.231	0.095			13:37:48	Yes
3	4.953	4.953	0.095	0.260	0.097			13:38:19	Yes
Mean:	4.722	4.722	0.090						
SD:	0.278	0.278	0.0053						
%RSD:	5.893	5.893	5.89						

Sequence No.: 61 — **Autosampler Location: 50**
Sample ID: K1508571-~~012~~ 2 DISS — **Date Collected: 8/17/2015 1:39:05 PM**
Analyst: -011 — **Data Type: Original**

Replicate Data: K1508571-012 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	72.27	72.27	1.382	4.925	1.385			13:39:26	Yes
Sample concentration is greater than that of the highest standard.									
2	73.64	73.64	1.408	5.003	1.411			13:39:57	Yes
Sample concentration is greater than that of the highest standard.									
3	68.96	68.96	1.319	4.830	1.321			13:40:27	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	71.63	71.63	1.369						
SD:	2.405	2.405	0.0460						
%RSD:	3.357	3.357	3.36						

Sample concentration is greater than that of the highest standard.

JB 8/17/15

Sequence No.: 62
Sample ID: K1508571-~~013~~ 2 DISS
Analyst: -012

Autosampler Location: 51
Date Collected: 8/17/2015 1:41:14 PM
Data Type: Original

Replicate Data: K1508571-013 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	79.26	79.26	1.515	5.127	1.518			13:41:35	Yes
	Sample concentration is greater than that of the highest standard.								
2	76.18	76.18	1.456	5.123	1.459			13:42:06	Yes
	Sample concentration is greater than that of the highest standard.								
3	83.78	83.78	1.602	5.150	1.605			13:42:37	Yes
	Sample concentration is greater than that of the highest standard.								
Mean:	79.74	79.74	1.525						
SD:	3.823	3.823	0.0731						
%RSD:	4.794	4.794	4.79						
	Sample concentration is greater than that of the highest standard.								

Sequence No.: 63
Sample ID: K1508571-~~014~~ 2 DISS
Analyst: -013

Autosampler Location: 52
Date Collected: 8/17/2015 1:43:22 PM
Data Type: Original

Replicate Data: K1508571-014 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	51.87	51.87	0.992	3.159	0.994			13:43:43	Yes
	Sample concentration is greater than that of the highest standard.								
2	47.99	47.99	0.917	3.220	0.920			13:44:14	Yes
	Sample concentration is greater than that of the highest standard.								
3	50.72	50.72	0.970	3.206	0.972			13:44:45	Yes
	Sample concentration is greater than that of the highest standard.								
Mean:	50.19	50.19	0.960						
SD:	1.993	1.993	0.0381						
%RSD:	3.971	3.971	3.97						
	Sample concentration is greater than that of the highest standard.								

JB 8/17/15

Sequence No.: 64
Sample ID: K1508571-~~015~~ 2 DISS
Analyst: -014

Autosampler Location: 53
Date Collected: 8/17/2015 1:45:30 PM
Data Type: Original

Replicate Data: K1508571-015 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.275	0.275	0.005	0.012	0.008			13:45:51	Yes
2	0.269	0.269	0.005	0.019	0.008			13:46:22	Yes
3	0.141	0.141	0.003	0.003	0.005			13:46:53	Yes
Mean:	0.228	0.228	0.004						
SD:	0.076	0.076	0.0014						
%RSD:	33.21	33.21	33.21						

Sequence No.: 65
Sample ID: K1508571-~~016~~ 2 DISS
Analyst: -015

Autosampler Location: 54
Date Collected: 8/17/2015 1:47:39 PM
Data Type: Original

Replicate Data: K1508571-016 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	8.031	8.031	0.154	0.480	0.156			13:48:00	Yes
2	8.372	8.372	0.160	0.459	0.163			13:48:31	Yes

3	8.829	8.829	0.169	0.483	0.172	13:49:02	Yes
Mean:	8.411	8.411	0.161				
SD:	0.401	0.401	0.0077				
%RSD:	4.764	4.764	4.76				

Sequence No.: 66
Sample ID: K1508571-~~017~~ 2 DISS
Analyst: -016
Autosampler Location: 55
Date Collected: 8/17/2015 1:49:48 PM
Data Type: Original

Replicate Data: K1508571-017 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	18.19	18.19	0.348	1.071	0.351			13:50:10	Yes
Sample concentration is greater than that of the highest standard.									
2	18.66	18.66	0.357	1.079	0.360			13:50:41	Yes
Sample concentration is greater than that of the highest standard.									
3	18.01	18.01	0.344	1.075	0.347			13:51:11	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	18.29	18.29	0.350						
SD:	0.337	0.337	0.0064						
%RSD:	1.843	1.843	1.84						
Sample concentration is greater than that of the highest standard.									

JB 8/17/15

Sequence No.: 67
Sample ID: K1508571-~~018~~ 2 DISS
Analyst: -017
Autosampler Location: 56
Date Collected: 8/17/2015 1:51:58 PM
Data Type: Original

Replicate Data: K1508571-018 2 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.068	0.068	0.001	0.015	0.004			13:52:20	Yes
2	0.069	0.069	0.001	0.016	0.004			13:52:51	Yes
3	0.054	0.054	0.001	0.018	0.004			13:53:22	Yes
Mean:	0.064	0.064	0.001						
SD:	0.008	0.008	0.0002						
%RSD:	13.20	13.20	13.20						

Sequence No.: 68
Sample ID: ~~KQ1508823-01~~
Analyst: K1508571-018 2 DISS
Autosampler Location: 57
Date Collected: 8/17/2015 1:54:09 PM
Data Type: Original

Replicate Data: KQ1508823-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.67	10.67	0.204	0.592	0.207			13:54:31	Yes
2	10.31	10.31	0.197	0.587	0.200			13:55:02	Yes
3	10.69	10.69	0.204	0.613	0.207			13:55:33	Yes
Mean:	10.55	10.55	0.202						
SD:	0.215	0.215	0.0041						
%RSD:	2.035	2.035	2.03						

Sequence No.: 69
Sample ID: KQ1508823-~~02~~
Analyst: -01
Autosampler Location: 58
Date Collected: 8/17/2015 1:56:20 PM
Data Type: Original

Replicate Data: KQ1508823-~~02~~

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.040	-0.040	-0.001	-0.007	0.002			13:56:42	Yes

2	0.023	0.023	0.000	0.005	0.003		13:57:13	Yes
3	0.010	0.010	0.000	-0.002	0.003		13:57:44	Yes
Mean:	-0.002	-0.002	-0.000					
SD:	0.033	0.033	0.0006					
%RSD:	>999.9%	>999.9%	>999.9%					

Sequence No.: 70 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 1:58:31 PM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	8.747	8.747	0.167	0.415	0.170			13:58:54	Yes
2	8.694	8.694	0.166	0.439	0.169			13:59:24	Yes
3	7.193	7.193	0.138	0.411	0.140			13:59:55	Yes
Mean:	8.211	8.211	0.157						
SD:	0.883	0.883	0.0169						
%RSD:	10.75	10.75	10.75						

QC value within limits for As 193.70 Recovery = 109.48%
All analyte(s) passed QC.

Sequence No.: 71 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 2:00:43 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.032	0.032	0.001	0.008	0.003			14:01:04	Yes
2	0.059	0.059	0.001	-0.004	0.004			14:01:34	Yes
3	0.083	0.083	0.002	0.019	0.004			14:02:05	Yes
Mean:	0.058	0.058	0.001						
SD:	0.026	0.026	0.0005						
%RSD:	44.00	44.00	44.00						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 72 **Autosampler Location: 59**
Sample ID: K1508743-001 2 **Date Collected: 8/17/2015 2:02:50 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508743-001 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	93.21	93.21	1.782	6.523	1.785			14:03:13	Yes
Sample concentration is greater than that of the highest standard.									
2	90.46	90.46	1.729	6.543	1.732			14:03:43	Yes
Sample concentration is greater than that of the highest standard.									
3	93.30	93.30	1.784	6.555	1.787			14:04:14	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	92.32	92.32	1.765						
SD:	1.615	1.615	0.0309						
%RSD:	1.749	1.749	1.75						
Sample concentration is greater than that of the highest standard.									

JA 8/19/15

Sequence No.: 73 **Autosampler Location: 60**
Sample ID: K1508743-001A 2 **Date Collected: 8/17/2015 2:05:01 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508743-001A 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	85.29	85.29	1.631	6.514	1.633			14:05:24	Yes
Sample concentration is greater than that of the highest standard.									
2	90.36	90.36	1.728	6.528	1.730			14:05:55	Yes
Sample concentration is greater than that of the highest standard.									
3	86.70	86.70	1.658	6.489	1.660			14:06:26	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	87.45	87.45	1.672						
SD:	2.617	2.617	0.0500						
%RSD:	2.992	2.992	2.99						
Sample concentration is greater than that of the highest standard.									

Sequence No.: 74 Autosampler Location: 61
Sample ID: K1508743-001D 2 Date Collected: 8/17/2015 2:07:13 PM
Analyst: Data Type: Original

Replicate Data: K1508743-001D 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	14.29	14.29	0.273	0.732	0.276			14:07:36	Yes
Sample concentration is greater than that of the highest standard.									
2	15.85	15.85	0.303	0.766	0.306			14:08:07	Yes
Sample concentration is greater than that of the highest standard.									
3	13.46	13.46	0.257	0.727	0.260			14:08:37	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	14.53	14.53	0.278						
SD:	1.215	1.215	0.0232						
%RSD:	8.361	8.361	8.36						
Sample concentration is greater than that of the highest standard.									

Sequence No.: 75 Autosampler Location: 62
Sample ID: K1508743-001S 2 Date Collected: 8/17/2015 2:09:25 PM
Analyst: Data Type: Original

Replicate Data: K1508743-001S 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	9.066	9.066	0.173	0.462	0.176			14:09:48	Yes
2	9.166	9.166	0.175	0.476	0.178			14:10:19	Yes
3	9.717	9.717	0.186	0.490	0.189			14:10:50	Yes
Mean:	9.316	9.316	0.178						
SD:	0.351	0.351	0.0067						
%RSD:	3.765	3.765	3.76						

Sequence No.: 76 Autosampler Location: 63
Sample ID: K1508744-001 2 Date Collected: 8/17/2015 2:11:38 PM
Analyst: Data Type: Original

Replicate Data: K1508744-001 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	89.77	89.77	1.716	6.430	1.719			14:11:58	Yes
Sample concentration is greater than that of the highest standard.									
2	76.11	76.11	1.455	6.075	1.458			14:12:29	Yes
Sample concentration is greater than that of the highest standard.									
3	86.48	86.48	1.653	6.431	1.656			14:12:59	Yes
Sample concentration is greater than that of the highest standard.									
Mean:	84.12	84.12	1.608						

JS 8/17/15

SD:	7.128	7.128	0.1363
%RSD:	8.473	8.473	8.47

Sample concentration is greater than that of the highest standard.

==========

Sequence No.: 77 **Autosampler Location: 64**
Sample ID: K1508744-002 2 **Date Collected: 8/17/2015 2:13:44 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508744-002 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.387	3.387	0.065	0.189	0.068			14:14:04	Yes
2	2.936	2.936	0.056	0.161	0.059			14:14:35	Yes
3	3.050	3.050	0.058	0.185	0.061			14:15:05	Yes
Mean:	3.124	3.124	0.060						
SD:	0.234	0.234	0.0045						
%RSD:	7.498	7.498	7.50						

==========

Sequence No.: 78 **Autosampler Location: 65**
Sample ID: KQ1508823-02 **Date Collected: 8/17/2015 2:15:50 PM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508823-02

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.699	4.699	0.090	0.246	0.093			14:16:11	Yes
2	4.908	4.908	0.094	0.235	0.097			14:16:41	Yes
3	4.947	4.947	0.095	0.250	0.097			14:17:12	Yes
Mean:	4.851	4.851	0.093						
SD:	0.133	0.133	0.0025						
%RSD:	2.748	2.748	2.75						

==========

Sequence No.: 79 **Autosampler Location: 66**
Sample ID: KQ1508654-02 **Date Collected: 8/17/2015 2:17:57 PM**
Analyst: **Data Type: Original**

Replicate Data: KQ1508654-02

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.701	4.701	0.090	0.250	0.093			14:18:18	Yes
2	5.168	5.168	0.099	0.275	0.102			14:18:48	Yes
3	4.774	4.774	0.091	0.262	0.094			14:19:19	Yes
Mean:	4.881	4.881	0.093						
SD:	0.252	0.252	0.0048						
%RSD:	5.156	5.156	5.16						

==========

Sequence No.: 80 **Autosampler Location: 67**
Sample ID: K1508571-002 50 **Date Collected: 8/17/2015 2:20:04 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-002 50

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.835	7.835	0.150	0.416	0.153			14:20:25	Yes
2	7.563	7.563	0.145	0.432	0.147			14:20:56	Yes
3	7.469	7.469	0.143	0.416	0.146			14:21:26	Yes
Mean:	7.623	7.623	0.146						
SD:	0.190	0.190	0.0036						
%RSD:	2.494	2.494	2.49						

==========

Sequence No.: 81 **Autosampler Location: 68**
Sample ID: K1508571-003 10 **Date Collected: 8/17/2015 2:22:12 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508571-003 10

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.639	4.639	0.089	0.271	0.091			14:22:33	Yes
2	4.369	4.369	0.084	0.254	0.086			14:23:04	Yes
3	4.705	4.705	0.090	0.271	0.093			14:23:35	Yes
Mean:	4.571	4.571	0.087						
SD:	0.178	0.178	0.0034						
%RSD:	3.897	3.897	3.90						

==========

Sequence No.: 82 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 2:24:20 PM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.479	7.479	0.143	0.425	0.146			14:24:44	Yes
2	7.691	7.691	0.147	0.427	0.150			14:25:15	Yes
3	7.983	7.983	0.153	0.433	0.155			14:25:45	Yes
Mean:	7.717	7.717	0.148						
SD:	0.253	0.253	0.0048						
%RSD:	3.277	3.277	3.28						

QC value within limits for As 193.70 Recovery = 102.90%
All analyte(s) passed QC.

==========

Sequence No.: 83 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 2:26:33 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.471	3.471	0.066	0.285	0.069			14:26:53	Yes
2	-0.101	-0.101	-0.002	-0.098	0.001			14:27:24	Yes
3	-0.114	-0.114	-0.002	-0.020	0.001			14:27:55	Yes
Mean:	1.085	1.085	0.021						
SD:	2.066	2.066	0.0395						
%RSD:	190.4	190.4	190.40						

JB 8/17/15

QC value greater than the upper limit for As 193.70 Recovery = Not calculated
QC Failed. Stop the analysis.
User canceled analysis.

==========

Analysis Begun

Logged In Analyst: alkls.nouser **Technique: AA FIAS-Flame**
Spectrometer Model: AAnalyst 200, S/N 200S5061701 **Autosampler Model: AS-90**

Sample Information File: C:\data-AA\alkls.nouser\Sample Information\081715-As1.sif
Batch ID: 081715-As1
Results Data Set: 081715-As1
Results Library: C:\data-AA\alkls.nouser\Results\Hydride 2015.mdb

==========

Sequence No.: 83 **Autosampler Location: 1**

Sample ID: CCB
Analyst:
Date Collected: 8/17/2015 2:28:38 PM
Data Type: Original

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.030	-0.030	-0.001	-0.004	0.002			14:28:59	Yes
2	-0.050	-0.050	-0.001	-0.003	0.002			14:29:29	Yes
3	-0.050	-0.050	-0.001	0.003	0.002			14:30:00	Yes
Mean:	-0.043	-0.043	-0.001						
SD:	0.012	0.012	0.0002						
%RSD:	27.06	27.06	27.06						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 84
Sample ID: K1508571-007 20
Analyst:
Autosampler Location: 69
Date Collected: 8/17/2015 2:30:46 PM
Data Type: Original

Replicate Data: K1508571-007 20

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.569	4.569	0.087	0.254	0.090			14:31:07	Yes
2	4.314	4.314	0.082	0.239	0.085			14:31:37	Yes
3	4.675	4.675	0.089	0.247	0.092			14:32:08	Yes
Mean:	4.519	4.519	0.086						
SD:	0.185	0.185	0.0035						
%RSD:	4.100	4.100	4.10						

Sequence No.: 85
Sample ID: K1508571-011 40
Analyst:
Autosampler Location: 70
Date Collected: 8/17/2015 2:32:54 PM
Data Type: Original

Replicate Data: K1508571-011 40

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.64	10.64	0.203	0.599	0.206			14:33:15	Yes
2	10.22	10.22	0.195	0.591	0.198			14:33:46	Yes
3	10.21	10.21	0.195	0.577	0.198			14:34:17	Yes
Mean:	10.36	10.36	0.198						
SD:	0.242	0.242	0.0046						
%RSD:	2.338	2.338	2.34						

Sequence No.: 86
Sample ID: K1508571-012 40
Analyst:
Autosampler Location: 71
Date Collected: 8/17/2015 2:35:03 PM
Data Type: Original

Replicate Data: K1508571-012 40

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.18	10.18	0.195	0.573	0.197			14:35:25	Yes
2	11.28	11.28	0.216	0.573	0.218			14:35:56	Yes
Sample concentration is greater than that of the highest standard.									
3	10.21	10.21	0.195	0.579	0.198			14:36:27	Yes
Mean:	10.55	10.55	0.202						
SD:	0.630	0.630	0.0120						
%RSD:	5.971	5.971	5.97						

JB 8/17/15

Sequence No.: 87
Autosampler Location: 72

Sample ID: K1508571-013 40
Analyst:
Date Collected: 8/17/2015 2:37:13 PM
Data Type: Original

Replicate Data: K1508571-013 40

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	6.909	6.909	0.132	0.378	0.135			14:37:35	Yes
2	6.543	6.543	0.125	0.373	0.128			14:38:06	Yes
3	6.206	6.206	0.119	0.355	0.121			14:38:37	Yes
Mean:	6.553	6.553	0.125						
SD:	0.352	0.352	0.0067						
%RSD:	5.368	5.368	5.37						

Sequence No.: 88
Sample ID: K150~~8751~~-015 4
Analyst: 8571
Autosampler Location: 73
Date Collected: 8/17/2015 2:39:23 PM
Data Type: Original

Replicate Data: K1508751-015 4

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	5.894	5.894	0.113	0.316	0.115			14:39:46	Yes
2	5.324	5.324	0.102	0.308	0.105			14:40:16	Yes
3	5.354	5.354	0.102	0.318	0.105			14:40:47	Yes
Mean:	5.524	5.524	0.106						
SD:	0.321	0.321	0.0061						
%RSD:	5.807	5.807	5.81						

Sequence No.: 89
Sample ID: K150~~8751~~-016 20
Analyst: 8571
JB 8/17/15
Autosampler Location: 74
Date Collected: 8/17/2015 2:41:34 PM
Data Type: Original

Replicate Data: K1508751-016 20

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.525	2.525	0.048	0.154	0.051			14:41:57	Yes
2	2.684	2.684	0.051	0.149	0.054			14:42:28	Yes
3	2.366	2.366	0.045	0.137	0.048			14:42:59	Yes
Mean:	2.525	2.525	0.048						
SD:	0.159	0.159	0.0030						
%RSD:	6.315	6.315	6.32						

Sequence No.: 90
Sample ID: K150~~8751~~-018 10
Analyst: 8571
Autosampler Location: 75
Date Collected: 8/17/2015 2:43:46 PM
Data Type: Original

Replicate Data: K1508751-018 10

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.609	2.609	0.050	0.149	0.053			14:44:09	Yes
2	2.224	2.224	0.043	0.133	0.045			14:44:39	Yes
3	2.585	2.585	0.049	0.145	0.052			14:45:10	Yes
Mean:	2.473	2.473	0.047						
SD:	0.215	0.215	0.0041						
%RSD:	8.710	8.710	8.71						

Sequence No.: 91
Sample ID: K1508571-002 50 DISS
Analyst:
Autosampler Location: 76
Date Collected: 8/17/2015 2:45:58 PM
Data Type: Original

Replicate Data: K1508571-002 50 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.216	7.216	0.138	0.433	0.141			14:46:21	Yes
2	7.423	7.423	0.142	0.435	0.145			14:46:51	Yes
3	7.139	7.139	0.136	0.423	0.139			14:47:22	Yes
Mean:	7.260	7.260	0.139						
SD:	0.147	0.147	0.0028						
%RSD:	2.024	2.024	2.02						

Sequence No.: 92
Sample ID: K1508571-003 10 DISS
Analyst:
Autosampler Location: 77
Date Collected: 8/17/2015 2:48:10 PM
Data Type: Original

Replicate Data: K1508571-003 10 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.323	4.323	0.083	0.256	0.085			14:48:33	Yes
2	4.358	4.358	0.083	0.252	0.086			14:49:04	Yes
3	4.496	4.496	0.086	0.247	0.089			14:49:35	Yes
Mean:	4.392	4.392	0.084						
SD:	0.092	0.092	0.0018						
%RSD:	2.088	2.088	2.09						

Sequence No.: 93
Sample ID: K1508571-007 20 DISS
Analyst:
Autosampler Location: 78
Date Collected: 8/17/2015 2:50:23 PM
Data Type: Original

Replicate Data: K1508571-007 20 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.252	4.252	0.081	0.255	0.084			14:50:42	Yes
2	4.490	4.490	0.086	0.266	0.089			14:51:13	Yes
3	4.347	4.347	0.083	0.245	0.086			14:51:44	Yes
Mean:	4.363	4.363	0.083						
SD:	0.120	0.120	0.0023						
%RSD:	2.744	2.744	2.74						

Sequence No.: 94
Sample ID: CCV
Analyst:
Autosampler Location: 5
Date Collected: 8/17/2015 2:52:28 PM
Data Type: Original

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.588	7.588	0.145	0.413	0.148			14:52:51	Yes
2	8.710	8.710	0.167	0.434	0.169			14:53:22	Yes
3	8.337	8.337	0.159	0.433	0.162			14:53:53	Yes
Mean:	8.212	8.212	0.157						
SD:	0.571	0.571	0.0109						
%RSD:	6.957	6.957	6.96						

QC value within limits for As 193.70 Recovery = 109.49%
All analyte(s) passed QC.

Sequence No.: 95
Sample ID: CCB
Analyst:
Autosampler Location: 1
Date Collected: 8/17/2015 2:54:40 PM
Data Type: Original

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.038	0.038	0.001	0.016	0.004			14:55:01	Yes
2	-0.145	-0.145	-0.003	-0.028	0.000			14:55:31	Yes
3	-0.106	-0.106	-0.002	-0.017	0.001			14:56:02	Yes
Mean:	-0.071	-0.071	-0.001						
SD:	0.096	0.096	0.0018						
%RSD:	135.7	135.7	135.67						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 96
Sample ID: K1508571-011 40 DISS
Analyst:

Autosampler Location: 79
Date Collected: 8/17/2015 2:56:47 PM
Data Type: Original

Replicate Data: K1508571-011 40 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	11.21	11.21	0.214	0.586	0.217			14:57:07	Yes
Sample concentration is greater than that of the highest standard.									
2	10.14	10.14	0.194	0.574	0.197			14:57:38	Yes
3	9.989	9.989	0.191	0.583	0.194			14:58:09	Yes
Mean:	10.45	10.45	0.200						
SD:	0.665	0.665	0.0127						
%RSD:	6.368	6.368	6.37						

JB 8/17/15

Sequence No.: 97
Sample ID: K1508571-012 40 DISS
Analyst:

Autosampler Location: 80
Date Collected: 8/17/2015 2:58:54 PM
Data Type: Original

Replicate Data: K1508571-012 40 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	8.177	8.177	0.156	0.517	0.159			14:59:14	Yes
2	9.287	9.287	0.178	0.535	0.180			14:59:45	Yes
3	9.414	9.414	0.180	0.519	0.183			15:00:15	Yes
Mean:	8.959	8.959	0.171						
SD:	0.681	0.681	0.0130						
%RSD:	7.600	7.600	7.60						

Sequence No.: 98
Sample ID: K1508571-013 40 DISS
Analyst:

Autosampler Location: 81
Date Collected: 8/17/2015 3:01:00 PM
Data Type: Original

Replicate Data: K1508571-013 40 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.376	4.376	0.084	0.252	0.086			15:01:21	Yes
2	3.970	3.970	0.076	0.143	0.079			15:01:52	Yes
3	4.601	4.601	0.088	0.227	0.091			15:02:23	Yes
Mean:	4.316	4.316	0.083						
SD:	0.320	0.320	0.0061						
%RSD:	7.408	7.408	7.41						

Sequence No.: 99
Sample ID: K1508571-015 4 DISS
Analyst:

Autosampler Location: 82
Date Collected: 8/17/2015 3:03:08 PM
Data Type: Original

JB 8/17/15

Replicate Data: K1508571-015 4 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.570	4.570	0.087	0.257	0.090			15:03:29	Yes
2	4.278	4.278	0.082	0.245	0.085			15:04:00	Yes
3	4.422	4.422	0.085	0.245	0.087			15:04:31	Yes
Mean:	4.423	4.423	0.085						
SD:	0.146	0.146	0.0028						
%RSD:	3.294	3.294	3.29						

Sequence No.: 100
Sample ID: K1508571-016 20 DISS
Analyst:
Autosampler Location: 83
Date Collected: 8/17/2015 3:05:16 PM
Data Type: Original

Replicate Data: K1508571-016 20 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.215	2.215	0.042	0.139	0.045			15:05:37	Yes
2	2.362	2.362	0.045	0.123	0.048			15:06:07	Yes
3	2.147	2.147	0.041	0.114	0.044			15:06:38	Yes
Mean:	2.241	2.241	0.043						
SD:	0.110	0.110	0.0021						
%RSD:	4.905	4.905	4.91						

Sequence No.: 101
Sample ID: K1508571-018 10 DISS
Analyst:
Autosampler Location: 84
Date Collected: 8/17/2015 3:07:24 PM
Data Type: Original

Replicate Data: K1508571-018 10 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.141	2.141	0.041	0.136	0.044			15:07:45	Yes
2	2.392	2.392	0.046	0.133	0.049			15:08:16	Yes
3	2.191	2.191	0.042	0.137	0.045			15:08:47	Yes
Mean:	2.241	2.241	0.043						
SD:	0.133	0.133	0.0025						
%RSD:	5.926	5.926	5.93						

Sequence No.: 102
Sample ID: K1508743-001 80
Analyst:
Autosampler Location: 85
Date Collected: 8/17/2015 3:09:33 PM
Data Type: Original

Replicate Data: K1508743-001 80

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	9.491	9.491	0.181	0.530	0.184			15:09:54	Yes
2	9.180	9.180	0.176	0.536	0.178			15:10:24	Yes
3	10.16	10.16	0.194	0.546	0.197			15:10:55	Yes
Mean:	9.611	9.611	0.184						
SD:	0.503	0.503	0.0096						
%RSD:	5.229	5.229	5.23						

JB 8/24/15

Sequence No.: 103
Sample ID: K1508743-001A 80
Analyst:
Autosampler Location: 86
Date Collected: 8/17/2015 3:11:41 PM
Data Type: Original

Replicate Data: K1508743-001A 80

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored

1	14.59	14.59	0.279	0.852	0.282	15:12:03	Yes
Sample concentration is greater than that of the highest standard.							
2	15.11	15.11	0.289	0.857	0.292	15:12:34	Yes
Sample concentration is greater than that of the highest standard.							
3	15.34	15.34	0.293	0.792	0.296	15:13:05	Yes
Sample concentration is greater than that of the highest standard.							
Mean:	15.01	15.01	0.287				
SD:	0.383	0.383	0.0073				
%RSD:	2.550	2.550	2.55				
Sample concentration is greater than that of the highest standard.							

Sequence No.: 104 **Autosampler Location: 87**
Sample ID: K1508743-001D 80 **Date Collected: 8/17/2015 3:13:51 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508743-001D 80

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	9.627	9.627	0.184	0.527	0.187			15:14:13	Yes
2	9.481	9.481	0.181	0.525	0.184			15:14:44	Yes
3	9.365	9.365	0.179	0.552	0.182			15:15:15	Yes
Mean:	9.491	9.491	0.181						
SD:	0.131	0.131	0.0025						
%RSD:	1.384	1.384	1.38						

Sequence No.: 105 **Autosampler Location: 88**
Sample ID: K1508743-001S 80 **Date Collected: 8/17/2015 3:16:01 PM**
Analyst: **Data Type: Original**

Replicate Data: K1508743-001S 80

JB 8/R/15

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.16	10.16	0.194	0.563	0.197			15:16:23	Yes
2	10.27	10.27	0.196	0.577	0.199			15:16:54	Yes
3	9.229	9.229	0.176	0.563	0.179			15:17:24	Yes
Mean:	9.889	9.889	0.189						
SD:	0.575	0.575	0.0110						
%RSD:	5.812	5.812	5.81						

Sequence No.: 106 **Autosampler Location: 5**
Sample ID: CCV **Date Collected: 8/17/2015 3:18:12 PM**
Analyst: **Data Type: Original**

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.953	7.953	0.152	0.424	0.155			15:18:34	Yes
2	7.078	7.078	0.135	0.408	0.138			15:19:05	Yes
3	7.727	7.727	0.148	0.425	0.151			15:19:36	Yes
Mean:	7.586	7.586	0.145						
SD:	0.454	0.454	0.0087						
%RSD:	5.986	5.986	5.99						

QC value within limits for As 193.70 Recovery = 101.15%
All analyte(s) passed QC.

Sequence No.: 107 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/17/2015 3:20:24 PM**
Analyst: **Data Type: Original**

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.019	-0.019	-0.000	0.006	0.002			15:20:44	Yes
2	0.044	0.044	0.001	0.013	0.004			15:21:15	Yes
3	-0.096	-0.096	-0.002	-0.021	0.001			15:21:46	Yes
Mean:	-0.023	-0.023	-0.000						
SD:	0.070	0.070	0.0013						
%RSD:	297.6	297.6	297.55						

QC value within limits for As 193.70 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 108 Autosampler Location: 89
Sample ID: K1508744-001 80 Date Collected: 8/17/2015 3:22:30 PM
Analyst: Data Type: Original

Replicate Data: K1508744-001 80

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	7.465	7.465	0.143	0.418	0.146			15:22:52	Yes
2	8.321	8.321	0.159	0.431	0.162			15:23:23	Yes
3	7.650	7.650	0.146	0.420	0.149			15:23:54	Yes
Mean:	7.812	7.812	0.149						
SD:	0.451	0.451	0.0086						
%RSD:	5.769	5.769	5.77						

Sequence No.: 109 Autosampler Location: 90
Sample ID: K1508744-002 2 Date Collected: 8/17/2015 3:24:41 PM
Analyst: Data Type: Original

Replicate Data: K1508744-002 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.306	3.306	0.063	0.197	0.066			15:25:04	Yes
2	3.318	3.318	0.063	0.194	0.066			15:25:35	Yes
3	3.189	3.189	0.061	0.210	0.064			15:26:05	Yes
Mean:	3.271	3.271	0.063						
SD:	0.071	0.071	0.0014						
%RSD:	2.170	2.170	2.17						

JB 8/17/15

Sequence No.: 110 Autosampler Location: 91
Sample ID: K1508571-011 100 Date Collected: 8/17/2015 3:26:53 PM
Analyst: Data Type: Original

Replicate Data: K1508571-011 100

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.046	4.046	0.077	0.229	0.080			15:27:16	Yes
2	4.072	4.072	0.078	0.242	0.081			15:27:46	Yes
3	3.825	3.825	0.073	0.209	0.076			15:28:17	Yes
Mean:	3.981	3.981	0.076						
SD:	0.136	0.136	0.0026						
%RSD:	3.413	3.413	3.41						

Sequence No.: 111 Autosampler Location: 92
Sample ID: K1508571-012 100 Date Collected: 8/17/2015 3:29:05 PM
Analyst: Data Type: Original

Replicate Data: K1508571-012 100

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.714	3.714	0.071	0.213	0.074			15:29:25	Yes
2	3.750	3.750	0.072	0.214	0.074			15:29:55	Yes
3	4.282	4.282	0.082	0.226	0.085			15:30:26	Yes
Mean:	3.916	3.916	0.075						
SD:	0.318	0.318	0.0061						
%RSD:	8.127	8.127	8.13						

Sequence No.: 112
Sample ID: K1508571-011 100 DISS
Analyst:
Autosampler Location: 93
Date Collected: 8/17/2015 3:31:10 PM
Data Type: Original

Replicate Data: K1508571-011 100 DISS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.894	3.894	0.074	0.221	0.077			15:31:31	Yes
2	3.782	3.782	0.072	0.232	0.075			15:32:01	Yes
3	4.238	4.238	0.081	0.236	0.084			15:32:31	Yes
Mean:	3.971	3.971	0.076						
SD:	0.237	0.237	0.0045						
%RSD:	5.980	5.980	5.98						

Sequence No.: 113
Sample ID: K1508743-001 200
Analyst:
Autosampler Location: 94
Date Collected: 8/17/2015 3:33:16 PM
Data Type: Original

Replicate Data: K1508743-001 200

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	3.953	3.953	0.076	0.234	0.078			15:33:36	Yes
2	4.126	4.126	0.079	0.232	0.082			15:34:07	Yes
3	4.259	4.259	0.081	0.231	0.084			15:34:38	Yes
Mean:	4.113	4.113	0.079						
SD:	0.153	0.153	0.0029						
%RSD:	3.721	3.721	3.72						

Sequence No.: 114
Sample ID: K1508743-001A 200
Analyst:
Autosampler Location: 95
Date Collected: 8/17/2015 3:35:22 PM
Data Type: Original

Replicate Data: K1508743-001A 200

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.43	10.43	0.199	0.552	0.202			15:35:43	Yes
2	10.01	10.01	0.191	0.560	0.194			15:36:14	Yes
3	10.57	10.57	0.202	0.553	0.205			15:36:44	Yes
Mean:	10.33	10.33	0.198						
SD:	0.292	0.292	0.0056						
%RSD:	2.829	2.829	2.83						

JG 8/17/15

Sequence No.: 115
Sample ID: K1508743-001D 200
Analyst:
Autosampler Location: 96
Date Collected: 8/17/2015 3:37:29 PM
Data Type: Original

Replicate Data: K1508743-001D 200

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	4.174	4.174	0.080	0.221	0.083			15:37:50	Yes

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 490-84512-2

Login Number: 84512
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	1.2
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 containers received and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
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 Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-83499-1
Client Project/Site: VCC Almont

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mike Purvis

Authorized for release by:
8/6/2015 11:56:00 AM

Heather Wagner, Project Manager I
(615)301-5763
heather.wagner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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.

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Case Narrative 4
Definitions 5
Client Sample Results 6
QC Sample Results 16
QC Association 28
Chronicle 33
Method Summary 36
Certification Summary 37
Chain of Custody 38
Receipt Checklists 40

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-83499-1	AL-IDW-Soil-01	Soil	07/22/15 15:05	07/24/15 08:40
490-83499-2	AL-IDW-Soil-02	Soil	07/22/15 15:10	07/24/15 08:40
490-83499-3	AL-IDW-Soil-03	Soil	07/22/15 15:15	07/24/15 08:40
490-83499-4	AL-IDW-Soil-04	Soil	07/22/15 15:20	07/24/15 08:40
490-83499-5	AL-IDW-Soil-05	Soil	07/23/15 10:45	07/24/15 08:40
490-83499-6	AL-IDW-Water-01	Water	07/23/15 08:00	07/24/15 08:40
490-83499-7	AL-IDW-Water-02	Water	07/23/15 08:10	07/24/15 08:40
490-83499-8	AL-IDW-Water-03	Water	07/23/15 08:20	07/24/15 08:40
490-83499-9	AL-IDW-Water-04	Water	07/23/15 11:00	07/24/15 08:40
490-83499-10	AL-IDW-Water-05	Water	07/23/15 11:05	07/24/15 08:40

Job ID: 490-83499-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-83499-1

Comments
No additional comments.

Receipt
The samples were received on 7/24/2015 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

Metals
Method(s) 6010C: The method blank for preparation batch 490-268017 and analytical batch 490-268758 contained sodium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 6010C: The method blank for preparation batch 490-267816 and analytical batch 490-268272 contained potassium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

Organic Prep
Method(s) 1311: Biphasic sample, approximately 20% AQ and solids, will not filter. Fluid volume adjusted for water present 400ml: AL-IDW-Soil-05 (490-83499-5)

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Qualifiers

Metals

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery 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.
B	Compound was found in the blank and sample.
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.
¤	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-01

Lab Sample ID: 490-83499-1

Date Collected: 07/22/15 15:05
Matrix: Soil
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.214**	**J**	0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 23:16	1
Barium	**0.247**	**J**	10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 23:16	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 23:16	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:16	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:16	1
Lead	**1.35**		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 23:16	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 23:16	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**43**		0.10	0.10	%			07/25/15 12:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-02

Lab Sample ID: 490-83499-2

Date Collected: 07/22/15 15:10
Matrix: Soil
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.185**	**J**	0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 23:21	1
Barium	**0.123**	**J**	10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 23:21	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 23:21	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:21	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:21	1
Lead	**0.434**	**J**	0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 23:21	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 23:21	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**82**		0.10	0.10	%			07/25/15 12:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-03

Lab Sample ID: 490-83499-3

Date Collected: 07/22/15 15:15
Matrix: Soil
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.226**	**J**	0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 23:25	1
Barium	**0.107**	**J**	10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 23:25	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 23:25	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:25	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:25	1
Lead	**0.437**	**J**	0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 23:25	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 23:25	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**65**		0.10	0.10	%			07/25/15 12:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-04

Lab Sample ID: 490-83499-4

Date Collected: 07/22/15 15:20
Matrix: Soil
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.210**	**J**	0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 23:29	1
Barium	**0.154**	**J**	10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 23:29	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 23:29	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:29	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:29	1
Lead	**1.32**		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 23:29	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 23:29	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:49	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**56**		0.10	0.10	%			07/25/15 12:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-05

Lab Sample ID: 490-83499-5

Date Collected: 07/23/15 10:45
Matrix: Soil
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		07/25/15 11:24	07/27/15 00:18	1
Barium	**0.279**	**J**	10.0	0.0500	mg/L		07/25/15 11:24	07/27/15 00:18	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/27/15 00:18	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/27/15 00:18	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/27/15 00:18	1
Lead	ND		0.500	0.0200	mg/L		07/25/15 11:24	07/27/15 00:18	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/27/15 00:18	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:29	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**16**		0.10	0.10	%			07/25/15 12:38	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**12.4**		0.100	0.100	SU			07/25/15 16:00	1
Temperature	**22.6**		0.100	0.100	Degrees C			07/25/15 16:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-01

Lab Sample ID: 490-83499-6

Date Collected: 07/23/15 08:00
Matrix: Water
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.521		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Antimony	0.0122		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Arsenic	0.694		0.0100	0.00860	mg/L		07/24/15 15:05	07/27/15 02:10	1
Barium	0.464		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Beryllium	ND		0.00400	0.00200	mg/L		07/24/15 15:05	07/27/15 02:10	1
Cadmium	ND		0.00100	0.000500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Calcium	166		1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Chromium	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:10	1
Cobalt	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Copper	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Iron	69.3		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Lead	0.172		0.00500	0.00200	mg/L		07/24/15 15:05	07/27/15 02:10	1
Magnesium	48.0		1.00	0.250	mg/L		07/24/15 15:05	07/27/15 02:10	1
Manganese	0.765		0.0150	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Nickel	ND		0.0100	0.00300	mg/L		07/24/15 15:05	07/27/15 02:10	1
Potassium	122	B	1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Selenium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Silver	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:10	1
Sodium	253		1.00	0.400	mg/L		07/24/15 15:05	07/28/15 23:39	1
Thallium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:10	1
Vanadium	ND		0.0200	0.0100	mg/L		07/24/15 15:05	07/27/15 02:10	1
Zinc	0.586		0.0500	0.250	mg/L		07/24/15 15:05	07/27/15 02:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000519		0.000200	0.000150	mg/L		07/24/15 15:14	07/24/15 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.25		0.100	0.100	SU			07/28/15 17:28	1
Temperature	22.2		0.100	0.100	Degrees C			07/28/15 17:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-02

Lab Sample ID: 490-83499-7

Date Collected: 07/23/15 08:10
Matrix: Water
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.692**		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Antimony	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Arsenic	**0.0121**		0.0100	0.00860	mg/L		07/24/15 15:05	07/27/15 02:06	1
Barium	**2.18**		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Beryllium	ND		0.00400	0.00200	mg/L		07/24/15 15:05	07/27/15 02:06	1
Cadmium	ND		0.00100	0.000500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Calcium	**55.4**		1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Chromium	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:06	1
Cobalt	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Copper	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Iron	**39.1**		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Lead	**0.0118**		0.00500	0.00200	mg/L		07/24/15 15:05	07/27/15 02:06	1
Magnesium	**15.7**		1.00	0.250	mg/L		07/24/15 15:05	07/27/15 02:06	1
Manganese	**0.322**		0.0150	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Nickel	ND		0.0100	0.00300	mg/L		07/24/15 15:05	07/27/15 02:06	1
Potassium	**88.8**	**B**	1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Selenium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Silver	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:06	1
Sodium	**18.4**		1.00	0.400	mg/L		07/24/15 15:05	07/28/15 23:16	1
Thallium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:06	1
Vanadium	ND		0.0200	0.0100	mg/L		07/24/15 15:05	07/27/15 02:06	1
Zinc	**0.329**		0.0500	0.250	mg/L		07/24/15 15:05	07/27/15 02:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/25/15 13:05	07/25/15 18:35	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.71**		0.100	0.100	SU			07/28/15 17:28	1
Temperature	**22.2**		0.100	0.100	Degrees C			07/28/15 17:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-03

Date Collected: 07/23/15 08:20
Date Received: 07/24/15 08:40

Lab Sample ID: 490-83499-8

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.857**		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Antimony	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Arsenic	**0.0522**		0.0100	0.00860	mg/L		07/24/15 15:05	07/27/15 02:18	1
Barium	**0.427**		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Beryllium	ND		0.00400	0.00200	mg/L		07/24/15 15:05	07/27/15 02:18	1
Cadmium	ND		0.00100	0.000500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Calcium	**118**		1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Chromium	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:18	1
Cobalt	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Copper	**0.0170**		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Iron	**12.5**		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Lead	**0.0139**		0.00500	0.00200	mg/L		07/24/15 15:05	07/27/15 02:18	1
Magnesium	**17.5**		1.00	0.250	mg/L		07/24/15 15:05	07/27/15 02:18	1
Manganese	**0.189**		0.0150	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Nickel	ND		0.0100	0.00300	mg/L		07/24/15 15:05	07/27/15 02:18	1
Potassium	**208**	**B**	1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Selenium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Silver	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:18	1
Sodium	**106**	**B**	1.00	0.400	mg/L		07/24/15 15:05	07/28/15 01:39	1
Thallium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:18	1
Vanadium	ND		0.0200	0.0100	mg/L		07/24/15 15:05	07/27/15 02:18	1
Zinc	**0.446**		0.0500	0.250	mg/L		07/24/15 15:05	07/27/15 02:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/25/15 13:05	07/25/15 18:37	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.88**		0.100	0.100	SU			07/28/15 17:28	1
Temperature	**22.2**		0.100	0.100	Degrees C			07/28/15 17:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-04

Lab Sample ID: 490-83499-9

Date Collected: 07/23/15 11:00
Matrix: Water
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.77**		0.100	0.0500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Antimony	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Arsenic	ND		0.0100	0.00860	mg/L		07/25/15 12:35	07/28/15 13:16	1
Barium	**1.23**		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Beryllium	ND		0.00400	0.00200	mg/L		07/25/15 12:35	07/28/15 13:16	1
Cadmium	ND		0.00100	0.000500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Calcium	**547**		1.00	0.500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Chromium	ND		0.00500	0.00300	mg/L		07/25/15 12:35	07/28/15 13:16	1
Cobalt	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Copper	**0.0206**		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Iron	**1.04**		0.100	0.0500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Lead	**0.0135**		0.00500	0.00200	mg/L		07/25/15 12:35	07/28/15 13:16	1
Magnesium	**0.292**	**J**	1.00	0.250	mg/L		07/25/15 12:35	07/28/15 13:16	1
Manganese	**0.0158**		0.0150	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Nickel	ND		0.0100	0.00300	mg/L		07/25/15 12:35	07/28/15 13:16	1
Potassium	**135**		1.00	0.500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Selenium	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Silver	ND		0.00500	0.00300	mg/L		07/25/15 12:35	07/28/15 13:16	1
Sodium	**177**	**B**	1.00	0.400	mg/L		07/25/15 12:35	08/05/15 01:05	1
Thallium	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 13:16	1
Vanadium	ND		0.0200	0.0100	mg/L		07/25/15 12:35	07/28/15 13:16	1
Zinc	ND		0.0500	0.250	mg/L		07/25/15 12:35	07/28/15 13:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/27/15 14:04	07/27/15 19:31	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**12.1**		0.100	0.100	SU			07/28/15 17:28	1
Temperature	**22.2**		0.100	0.100	Degrees C			07/28/15 17:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-05

Lab Sample ID: 490-83499-10

Date Collected: 07/23/15 11:05
Matrix: Water
Date Received: 07/24/15 08:40

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	21.2		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Antimony	0.00510	J	0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Arsenic	0.550		0.0100	0.00860	mg/L		07/24/15 15:05	07/27/15 02:14	1
Barium	0.258		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Beryllium	ND		0.00400	0.00200	mg/L		07/24/15 15:05	07/27/15 02:14	1
Cadmium	0.00410		0.00100	0.000500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Calcium	68.4		1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Chromium	0.0606		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:14	1
Cobalt	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Copper	0.713		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Iron	19.9		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Lead	0.180		0.00500	0.00200	mg/L		07/24/15 15:05	07/27/15 02:14	1
Magnesium	6.05		1.00	0.250	mg/L		07/24/15 15:05	07/27/15 02:14	1
Manganese	0.0914		0.0150	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Nickel	0.0142		0.0100	0.00300	mg/L		07/24/15 15:05	07/27/15 02:14	1
Potassium	54.8	B	1.00	0.500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Selenium	0.0109		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Silver	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 02:14	1
Sodium	348		1.00	0.400	mg/L		07/24/15 15:05	07/28/15 23:44	1
Thallium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 02:14	1
Vanadium	0.0546		0.0200	0.0100	mg/L		07/24/15 15:05	07/27/15 02:14	1
Zinc	0.326		0.0500	0.250	mg/L		07/24/15 15:05	07/27/15 02:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00395		0.000200	0.000150	mg/L		07/25/15 13:05	07/25/15 18:39	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.58		0.100	0.100	SU			07/28/15 17:28	1
Temperature	22.2		0.100	0.100	Degrees C			07/28/15 17:28	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 490-267816/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268272 — **Prep Batch: 267816**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Antimony	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Arsenic	ND		0.0100	0.00860	mg/L		07/24/15 15:05	07/27/15 00:27	1
Barium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Beryllium	ND		0.00400	0.00200	mg/L		07/24/15 15:05	07/27/15 00:27	1
Cadmium	ND		0.00100	0.000500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Calcium	ND		1.00	0.500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Chromium	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 00:27	1
Cobalt	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Copper	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Iron	ND		0.100	0.0500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Lead	ND		0.00500	0.00200	mg/L		07/24/15 15:05	07/27/15 00:27	1
Magnesium	ND		1.00	0.250	mg/L		07/24/15 15:05	07/27/15 00:27	1
Manganese	ND		0.0150	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Nickel	ND		0.0100	0.00300	mg/L		07/24/15 15:05	07/27/15 00:27	1
Potassium	0.6947	J	1.00	0.500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Selenium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Silver	ND		0.00500	0.00300	mg/L		07/24/15 15:05	07/27/15 00:27	1
Thallium	ND		0.0100	0.00500	mg/L		07/24/15 15:05	07/27/15 00:27	1
Vanadium	ND		0.0200	0.0100	mg/L		07/24/15 15:05	07/27/15 00:27	1
Zinc	ND		0.0500	0.250	mg/L		07/24/15 15:05	07/27/15 00:27	1

Lab Sample ID: MB 490-267816/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268942 — **Prep Batch: 267816**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		1.00	0.400	mg/L		07/24/15 15:05	07/28/15 22:32	1

Lab Sample ID: LCS 490-267816/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268272 — **Prep Batch: 267816**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.972		mg/L		99	80 - 120
Antimony	0.100	0.09950		mg/L		100	80 - 120
Arsenic	0.0500	0.04580		mg/L		92	80 - 120
Barium	2.00	2.066		mg/L		103	80 - 120
Beryllium	0.0500	0.04950		mg/L		99	80 - 120
Cadmium	0.0500	0.04790		mg/L		96	80 - 120
Calcium	5.00	4.888		mg/L		98	80 - 120
Chromium	0.200	0.1947		mg/L		97	80 - 120
Cobalt	0.500	0.5175		mg/L		104	80 - 120
Copper	0.250	0.2487		mg/L		99	80 - 120
Iron	1.00	0.9896		mg/L		99	80 - 120
Lead	0.0500	0.05200		mg/L		104	80 - 120
Magnesium	5.00	4.828		mg/L		97	80 - 120
Manganese	0.500	0.4967		mg/L		99	80 - 120

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

Lab Sample ID: LCS 490-267816/2-A
Matrix: Water
Analysis Batch: 268272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	0.500	0.5247		mg/L		105	80 - 120
Potassium	5.00	5.123		mg/L		102	80 - 120
Selenium	0.0500	0.04940		mg/L		99	80 - 120
Silver	0.0500	0.04270		mg/L		85	80 - 120
Thallium	0.550	0.5755		mg/L		105	80 - 120
Vanadium	0.500	0.4809		mg/L		96	80 - 120
Zinc	0.500	0.4753		mg/L		95	80 - 120

Lab Sample ID: LCS 490-267816/2-A
Matrix: Water
Analysis Batch: 268942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	5.00	4.941		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-267816/3-A
Matrix: Water
Analysis Batch: 268272

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267816

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	1.987		mg/L		99	80 - 120	1	20
Antimony	0.100	0.1025		mg/L		103	80 - 120	3	20
Arsenic	0.0500	0.04830		mg/L		97	80 - 120	5	20
Barium	2.00	2.098		mg/L		105	80 - 120	2	20
Beryllium	0.0500	0.05090		mg/L		102	80 - 120	3	20
Cadmium	0.0500	0.04850		mg/L		97	80 - 120	1	20
Calcium	5.00	4.968		mg/L		99	80 - 120	2	20
Chromium	0.200	0.1981		mg/L		99	80 - 120	2	20
Cobalt	0.500	0.5241		mg/L		105	80 - 120	1	20
Copper	0.250	0.2506		mg/L		100	80 - 120	1	20
Iron	1.00	1.004		mg/L		100	80 - 120	1	20
Lead	0.0500	0.05250		mg/L		105	80 - 120	1	20
Magnesium	5.00	4.965		mg/L		99	80 - 120	3	20
Manganese	0.500	0.5063		mg/L		101	80 - 120	2	20
Nickel	0.500	0.5324		mg/L		106	80 - 120	1	20
Potassium	5.00	5.177		mg/L		104	80 - 120	1	20
Selenium	0.0500	0.04960		mg/L		99	80 - 120	0	20
Silver	0.0500	0.04360		mg/L		87	80 - 120	2	20
Thallium	0.550	0.5556		mg/L		101	80 - 120	4	20
Vanadium	0.500	0.4911		mg/L		98	80 - 120	2	20
Zinc	0.500	0.4838		mg/L		97	80 - 120	2	20

Lab Sample ID: LCSD 490-267816/3-A
Matrix: Water
Analysis Batch: 268942

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267816

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	5.00	5.005		mg/L		100	80 - 120	1	20

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

Lab Sample ID: 490-83446-A-5-D MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268272 — **Prep Batch: 267816**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND	F2	2.00	1.978		mg/L		99	75 - 125
Antimony	ND		0.100	0.1014		mg/L		101	75 - 125
Arsenic	ND		0.0500	0.04780		mg/L		96	75 - 125
Barium	0.00920	J	2.00	2.080		mg/L		104	75 - 125
Beryllium	ND	F2	0.0500	0.04970		mg/L		99	75 - 125
Cadmium	ND		0.0500	0.04810		mg/L		96	75 - 125
Calcium	14.6	F2 F1	5.00	19.17		mg/L		92	75 - 125
Chromium	ND		0.200	0.1941		mg/L		97	75 - 125
Cobalt	ND		0.500	0.5174		mg/L		103	75 - 125
Copper	ND		0.250	0.2506		mg/L		100	75 - 125
Iron	ND	F2	1.00	0.9837		mg/L		98	75 - 125
Lead	ND		0.0500	0.05420		mg/L		108	75 - 125
Magnesium	4.16	F1	5.00	8.768		mg/L		92	75 - 125
Manganese	0.00680	J	0.500	0.4967		mg/L		98	75 - 125
Nickel	ND		0.500	0.5245		mg/L		105	75 - 125
Potassium	1.68	F2 F1 B	5.00	6.150		mg/L		89	75 - 125
Selenium	ND		0.0500	0.05140		mg/L		103	75 - 125
Silver	ND		0.0500	0.04320		mg/L		86	75 - 125
Thallium	ND		0.550	0.5091		mg/L		93	75 - 125
Vanadium	0.0110	J F2 F1	0.500	0.4911		mg/L		96	75 - 125
Zinc	ND		0.500	0.4791		mg/L		96	75 - 125

Lab Sample ID: 490-83446-A-5-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268272 — **Prep Batch: 267816**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND	F2	2.00	1.550	F2	mg/L		78	75 - 125	24	20
Antimony	ND		0.100	0.1017		mg/L		102	75 - 125	0	20
Arsenic	ND		0.0500	0.04920		mg/L		98	75 - 125	3	20
Barium	0.00920	J	2.00	2.051		mg/L		102	75 - 125	1	20
Beryllium	ND	F2	0.0500	0.03910	F2	mg/L		78	75 - 125	24	20
Cadmium	ND		0.0500	0.04730		mg/L		95	75 - 125	2	20
Calcium	14.6	F2 F1	5.00	15.36	F1 F2	mg/L		15	75 - 125	22	20
Chromium	ND		0.200	0.1910		mg/L		96	75 - 125	2	20
Cobalt	ND		0.500	0.5099		mg/L		102	75 - 125	1	20
Copper	ND		0.250	0.2074		mg/L		83	75 - 125	19	20
Iron	ND	F2	1.00	0.7712	F2	mg/L		77	75 - 125	24	20
Lead	ND		0.0500	0.05270		mg/L		105	75 - 125	3	20
Magnesium	4.16	F1	5.00	7.170	F1	mg/L		60	75 - 125	20	20
Manganese	0.00680	J	0.500	0.4888		mg/L		96	75 - 125	2	20
Nickel	ND		0.500	0.5167		mg/L		103	75 - 125	1	20
Potassium	1.68	F2 F1 B	5.00	4.783	F1 F2	mg/L		62	75 - 125	25	20
Selenium	ND		0.0500	0.05020		mg/L		100	75 - 125	2	20
Silver	ND		0.0500	0.04240		mg/L		85	75 - 125	2	20
Thallium	ND		0.550	0.5587		mg/L		102	75 - 125	9	20
Vanadium	0.0110	J F2 F1	0.500	0.3752	F1 F2	mg/L		73	75 - 125	27	20
Zinc	ND		0.500	0.4732		mg/L		95	75 - 125	1	20

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

Lab Sample ID: MB 490-267975/1-A
Matrix: Solid
Analysis Batch: 268272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267975

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 21:55	1
Barium	ND		10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 21:55	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 21:55	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 21:55	1
Lead	ND		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 21:55	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 21:55	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 21:55	1

Lab Sample ID: LCS 490-267975/2-A
Matrix: Solid
Analysis Batch: 268272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	1.991		mg/L		100	80 - 120
Barium	20.0	21.48		mg/L		107	80 - 120
Cadmium	2.00	2.042		mg/L		102	80 - 120
Chromium	10.0	10.26		mg/L		103	80 - 120
Lead	10.0	10.82		mg/L		108	80 - 120
Selenium	2.00	2.063		mg/L		103	80 - 120
Silver	2.00	2.073		mg/L		104	80 - 120

Lab Sample ID: MB 490-268017/1-A
Matrix: Water
Analysis Batch: 268758

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268017

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.100	0.0500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Antimony	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Arsenic	ND		0.0100	0.00860	mg/L		07/25/15 12:35	07/28/15 10:57	1
Barium	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Beryllium	ND		0.00400	0.00200	mg/L		07/25/15 12:35	07/28/15 10:57	1
Cadmium	ND		0.00100	0.000500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Calcium	ND		1.00	0.500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Chromium	ND		0.00500	0.00300	mg/L		07/25/15 12:35	07/28/15 10:57	1
Cobalt	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Copper	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Iron	ND		0.100	0.0500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Lead	ND		0.00500	0.00200	mg/L		07/25/15 12:35	07/28/15 10:57	1
Magnesium	ND		1.00	0.250	mg/L		07/25/15 12:35	07/28/15 10:57	1
Manganese	ND		0.0150	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Nickel	ND		0.0100	0.00300	mg/L		07/25/15 12:35	07/28/15 10:57	1
Potassium	ND		1.00	0.500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Selenium	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Silver	ND		0.00500	0.00300	mg/L		07/25/15 12:35	07/28/15 10:57	1
Sodium	0.8152	J	1.00	0.400	mg/L		07/25/15 12:35	07/28/15 10:57	1
Thallium	ND		0.0100	0.00500	mg/L		07/25/15 12:35	07/28/15 10:57	1
Vanadium	ND		0.0200	0.0100	mg/L		07/25/15 12:35	07/28/15 10:57	1
Zinc	ND		0.0500	0.250	mg/L		07/25/15 12:35	07/28/15 10:57	1

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

Lab Sample ID: LCS 490-268017/2-A
Matrix: Water
Analysis Batch: 268758

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268017

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.040		mg/L		102	80 - 120
Antimony	0.100	0.1120		mg/L		112	80 - 120
Arsenic	0.0500	0.05190		mg/L		104	80 - 120
Barium	2.00	2.143		mg/L		107	80 - 120
Beryllium	0.0500	0.04870		mg/L		97	80 - 120
Cadmium	0.0500	0.05030		mg/L		101	80 - 120
Calcium	5.00	5.019		mg/L		100	80 - 120
Chromium	0.200	0.1913		mg/L		96	80 - 120
Cobalt	0.500	0.5200		mg/L		104	80 - 120
Copper	0.250	0.2531		mg/L		101	80 - 120
Iron	1.00	1.040		mg/L		104	80 - 120
Lead	0.0500	0.05200		mg/L		104	80 - 120
Magnesium	5.00	4.818		mg/L		96	80 - 120
Manganese	0.500	0.5026		mg/L		101	80 - 120
Nickel	0.500	0.5237		mg/L		105	80 - 120
Potassium	5.00	4.894		mg/L		98	80 - 120
Selenium	0.0500	0.05220		mg/L		104	80 - 120
Silver	0.0500	0.05280		mg/L		106	80 - 120
Sodium	5.00	5.735		mg/L		115	80 - 120
Thallium	0.550	0.6077		mg/L		110	80 - 120
Vanadium	0.500	0.4947		mg/L		99	80 - 120
Zinc	0.500	0.5057		mg/L		101	80 - 120

Lab Sample ID: LCSD 490-268017/3-A
Matrix: Water
Analysis Batch: 268758

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 268017

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	2.024		mg/L		101	80 - 120	1	20
Antimony	0.100	0.1116		mg/L		112	80 - 120	0	20
Arsenic	0.0500	0.04820		mg/L		96	80 - 120	7	20
Barium	2.00	2.131		mg/L		107	80 - 120	1	20
Beryllium	0.0500	0.04920		mg/L		98	80 - 120	1	20
Cadmium	0.0500	0.05000		mg/L		100	80 - 120	1	20
Calcium	5.00	4.996		mg/L		100	80 - 120	0	20
Chromium	0.200	0.1928		mg/L		96	80 - 120	1	20
Cobalt	0.500	0.5168		mg/L		103	80 - 120	1	20
Copper	0.250	0.2519		mg/L		101	80 - 120	0	20
Iron	1.00	1.014		mg/L		101	80 - 120	3	20
Lead	0.0500	0.05180		mg/L		104	80 - 120	0	20
Magnesium	5.00	4.815		mg/L		96	80 - 120	0	20
Manganese	0.500	0.5039		mg/L		101	80 - 120	0	20
Nickel	0.500	0.5193		mg/L		104	80 - 120	1	20
Potassium	5.00	4.882		mg/L		98	80 - 120	0	20
Selenium	0.0500	0.05100		mg/L		102	80 - 120	2	20
Silver	0.0500	0.05380		mg/L		108	80 - 120	2	20
Sodium	5.00	5.616		mg/L		112	80 - 120	2	20
Thallium	0.550	0.5969		mg/L		109	80 - 120	2	20

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

Lab Sample ID: LCSD 490-268017/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268758 — **Prep Batch: 268017**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vanadium			0.500	0.4944		mg/L		99	80 - 120	0	20
Zinc			0.500	0.5027		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-83503-D-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268758 — **Prep Batch: 268017**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND	L	2.00	1.717		mg/L		86	75 - 125
Antimony	ND		0.100	0.1190		mg/L		119	75 - 125
Arsenic	0.00930	J	0.0500	0.05720		mg/L		96	75 - 125
Barium	0.319		2.00	2.389		mg/L		104	75 - 125
Beryllium	ND		0.0500	0.04850		mg/L		97	75 - 125
Cadmium	ND		0.0500	0.04840		mg/L		97	75 - 125
Calcium	183		5.00	192.9	4	mg/L		192	75 - 125
Chromium	ND		0.200	0.1875		mg/L		94	75 - 125
Cobalt	ND		0.500	0.4906		mg/L		98	75 - 125
Copper	ND		0.250	0.2514		mg/L		101	75 - 125
Iron	27.6		1.00	29.38	4	mg/L		177	75 - 125
Lead	0.00380	J	0.0500	0.05250		mg/L		97	75 - 125
Magnesium	28.7		5.00	34.03	4	mg/L		107	75 - 125
Manganese	1.54		0.500	2.104		mg/L		113	75 - 125
Nickel	ND		0.500	0.4933		mg/L		99	75 - 125
Potassium	9.44		5.00	14.77		mg/L		107	75 - 125
Selenium	ND		0.0500	0.05300		mg/L		106	75 - 125
Silver	ND		0.0500	0.05590		mg/L		112	75 - 125
Sodium	92.9	B	5.00	97.30	4	mg/L		88	75 - 125
Thallium	ND		0.550	0.5574		mg/L		101	75 - 125
Vanadium	ND		0.500	0.4921		mg/L		98	75 - 125
Zinc	ND		0.500	0.5268		mg/L		105	75 - 125

Lab Sample ID: 490-83503-D-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268758 — **Prep Batch: 268017**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND	L	2.00	1.720		mg/L		86	75 - 125	0	20
Antimony	ND		0.100	0.1163		mg/L		116	75 - 125	2	20
Arsenic	0.00930	J	0.0500	0.06790		mg/L		117	75 - 125	17	20
Barium	0.319		2.00	2.351		mg/L		102	75 - 125	2	20
Beryllium	ND		0.0500	0.04780		mg/L		96	75 - 125	1	20
Cadmium	ND		0.0500	0.04740		mg/L		95	75 - 125	2	20
Calcium	183		5.00	190.8	4	mg/L		150	75 - 125	1	20
Chromium	ND		0.200	0.1858		mg/L		93	75 - 125	1	20
Cobalt	ND		0.500	0.4830		mg/L		97	75 - 125	2	20
Copper	ND		0.250	0.2469		mg/L		99	75 - 125	2	20
Iron	27.6		1.00	29.12	4	mg/L		151	75 - 125	1	20
Lead	0.00380	J	0.0500	0.05190		mg/L		96	75 - 125	1	20
Magnesium	28.7		5.00	33.79	4	mg/L		102	75 - 125	1	20

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

Lab Sample ID: 490-83503-D-1-C MSD
Matrix: Water
Analysis Batch: 268758

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 268017

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	1.54		0.500	2.043		mg/L		101	75 - 125	3	20
Nickel	ND		0.500	0.4842		mg/L		97	75 - 125	2	20
Potassium	9.44		5.00	14.56		mg/L		102	75 - 125	1	20
Selenium	ND		0.0500	0.05220		mg/L		104	75 - 125	2	20
Silver	ND		0.0500	0.05490		mg/L		110	75 - 125	2	20
Sodium	92.9	B	5.00	97.03	4	mg/L		83	75 - 125	0	20
Thallium	ND		0.550	0.5266		mg/L		96	75 - 125	6	20
Vanadium	ND		0.500	0.4838		mg/L		97	75 - 125	2	20
Zinc	ND		0.500	0.5177		mg/L		104	75 - 125	2	20

Lab Sample ID: MB 490-267792/1-B
Matrix: Solid
Analysis Batch: 268272

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 267975

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 23:34	1
Barium	ND		10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 23:34	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 23:34	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:34	1
Lead	ND		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 23:34	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 23:34	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 23:34	1

Lab Sample ID: MB 490-267799/1-B
Matrix: Solid
Analysis Batch: 268272

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 267975

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 22:40	1
Barium	ND		10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 22:40	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 22:40	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 22:40	1
Lead	ND		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 22:40	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 22:40	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 22:40	1

Lab Sample ID: MB 490-267800/1-B
Matrix: Solid
Analysis Batch: 268272

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 267975

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		07/25/15 11:24	07/26/15 22:04	1
Barium	ND		10.0	0.0500	mg/L		07/25/15 11:24	07/26/15 22:04	1
Cadmium	ND		0.100	0.00500	mg/L		07/25/15 11:24	07/26/15 22:04	1
Chromium	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 22:04	1
Lead	ND		0.500	0.0200	mg/L		07/25/15 11:24	07/26/15 22:04	1
Selenium	ND		0.100	0.0500	mg/L		07/25/15 11:24	07/26/15 22:04	1
Silver	ND		0.500	0.0300	mg/L		07/25/15 11:24	07/26/15 22:04	1

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

Lab Sample ID: 490-83495-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268272 — **Prep Batch: 267975**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		2.00	2.004		mg/L		100	75 - 125
Barium	0.321	J	20.0	20.86		mg/L		103	75 - 125
Cadmium	ND		2.00	1.992		mg/L		100	75 - 125
Chromium	ND		10.0	9.753		mg/L		98	75 - 125
Lead	0.0350	J	10.0	10.42		mg/L		104	75 - 125
Selenium	ND		2.00	2.105		mg/L		105	75 - 125
Silver	ND		2.00	2.048		mg/L		102	75 - 125

Lab Sample ID: 490-83495-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268272 — **Prep Batch: 267975**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		2.00	2.101		mg/L		105	75 - 125	5	20
Barium	0.321	J	20.0	21.51		mg/L		106	75 - 125	3	20
Cadmium	ND		2.00	2.050		mg/L		103	75 - 125	3	20
Chromium	ND		10.0	10.11		mg/L		101	75 - 125	4	20
Lead	0.0350	J	10.0	10.70		mg/L		107	75 - 125	3	20
Selenium	ND		2.00	2.162		mg/L		108	75 - 125	3	20
Silver	ND		2.00	2.121		mg/L		106	75 - 125	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-267803/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268069 — **Prep Batch: 267803**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/24/15 14:42	07/24/15 19:12	1

Lab Sample ID: LCS 490-267803/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268069 — **Prep Batch: 267803**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.0009248		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-267803/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268069 — **Prep Batch: 267803**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00100	0.0009041		mg/L		90	80 - 120	2	20

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 490-83369-D-1-D MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268069 — **Prep Batch: 267803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.00100	0.0008817		mg/L		88	75 - 125		

Lab Sample ID: 490-83369-D-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268069 — **Prep Batch: 267803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.0009645		mg/L		96	75 - 125	9	20

Lab Sample ID: MB 490-268021/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:10	1

Lab Sample ID: LCS 490-268021/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0200	0.01896		mg/L		95	80 - 120

Lab Sample ID: MB 490-268025/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268025**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/25/15 12:59	07/25/15 19:04	1

Lab Sample ID: MB 490-268026/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268026**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/25/15 13:05	07/25/15 18:03	1

Lab Sample ID: LCS 490-268026/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268026**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.0009180		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-268026/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268026**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00100	0.0009268		mg/L		93	80 - 120	1	20

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Lab Sample ID: 490-83502-E-1-F MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268026**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.0009611		mg/L		96	75 - 125

Lab Sample ID: 490-83502-E-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268351 — **Prep Batch: 268026**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.0009677		mg/L		97	75 - 125	1	20

Lab Sample ID: MB 490-268414/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268515 — **Prep Batch: 268414**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000150	mg/L		07/27/15 14:04	07/27/15 18:47	1

Lab Sample ID: LCS 490-268414/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268515 — **Prep Batch: 268414**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.001065		mg/L		107	80 - 120

Lab Sample ID: LCSD 490-268414/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268515 — **Prep Batch: 268414**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00100	0.0009841		mg/L		98	80 - 120	8	20

Lab Sample ID: 490-83550-B-2-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268515 — **Prep Batch: 268414**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.0009609		mg/L		96	75 - 125

Lab Sample ID: 490-83550-B-2-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268515 — **Prep Batch: 268414**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.0009781		mg/L		98	75 - 125	2	20

Lab Sample ID: MB 490-267792/1-C — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:15	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 490-267799/1-C — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00150	mg/L		07/25/15 12:51	07/25/15 17:39	1

Lab Sample ID: 490-83482-A-1-D MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.0200	0.02052		mg/L		103	75 - 125		

Lab Sample ID: 490-83482-A-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 268351 — **Prep Batch: 268021**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.0200	0.02054		mg/L		103	75 - 125	0	20

Method: 9040C - pH

Lab Sample ID: LCS 490-268866/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268866

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.000		SU		100	95 - 105		

Lab Sample ID: 490-83499-6 DU — **Client Sample ID: AL-IDW-Water-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268866

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.25			6.260		SU				0.2	20
Temperature	22.2			22.20		Degrees C				0	20

Method: 9045D - pH

Lab Sample ID: LCS 490-268127/6 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 268127

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.050		SU		101	95 - 105		

Lab Sample ID: 490-83344-C-1-C DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 268127

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.14			8.140		SU				0	20
Temperature	22.6			22.60		Degrees C				0	20

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Method: Moisture - Percent Moisture

Lab Sample ID: 490-83499-1 DU
Matrix: Soil
Analysis Batch: 268018

Client Sample ID: AL-IDW-Soil-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	43			43		%				0.8	20

Metals

Leach Batch: 267792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83482-A-1-D MS	Matrix Spike	TCLP	Solid	1311	
490-83482-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
490-83499-5	AL-IDW-Soil-05	TCLP	Soil	1311	
MB 490-267792/1-B	Method Blank	TCLP	Solid	1311	
MB 490-267792/1-C	Method Blank	TCLP	Solid	1311	

Leach Batch: 267799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-1	AL-IDW-Soil-01	TCLP	Soil	1311	
490-83499-2	AL-IDW-Soil-02	TCLP	Soil	1311	
490-83499-3	AL-IDW-Soil-03	TCLP	Soil	1311	
490-83499-4	AL-IDW-Soil-04	TCLP	Soil	1311	
MB 490-267799/1-B	Method Blank	TCLP	Solid	1311	
MB 490-267799/1-C	Method Blank	TCLP	Solid	1311	

Leach Batch: 267800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83495-A-1-E MS	Matrix Spike	TCLP	Solid	1311	
490-83495-A-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
MB 490-267800/1-B	Method Blank	TCLP	Solid	1311	

Prep Batch: 267803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83369-D-1-D MS	Matrix Spike	Total/NA	Water	7470A	
490-83369-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-83499-6	AL-IDW-Water-01	Total/NA	Water	7470A	
LCS 490-267803/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-267803/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-267803/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 267816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83446-A-5-D MS	Matrix Spike	Total/NA	Water	3010A	
490-83446-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
490-83499-6	AL-IDW-Water-01	Total/NA	Water	3010A	
490-83499-7	AL-IDW-Water-02	Total/NA	Water	3010A	
490-83499-8	AL-IDW-Water-03	Total/NA	Water	3010A	
490-83499-10	AL-IDW-Water-05	Total/NA	Water	3010A	
LCS 490-267816/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 490-267816/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 490-267816/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 267975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83495-A-1-E MS	Matrix Spike	TCLP	Solid	3010A	267800
490-83495-A-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	3010A	267800
490-83499-1	AL-IDW-Soil-01	TCLP	Soil	3010A	267799
490-83499-2	AL-IDW-Soil-02	TCLP	Soil	3010A	267799
490-83499-3	AL-IDW-Soil-03	TCLP	Soil	3010A	267799
490-83499-4	AL-IDW-Soil-04	TCLP	Soil	3010A	267799
490-83499-5	AL-IDW-Soil-05	TCLP	Soil	3010A	267792

Metals (Continued)

Prep Batch: 267975 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-267975/2-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 490-267792/1-B	Method Blank	TCLP	Solid	3010A	267792
MB 490-267799/1-B	Method Blank	TCLP	Solid	3010A	267799
MB 490-267800/1-B	Method Blank	TCLP	Solid	3010A	267800
MB 490-267975/1-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 268017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-9	AL-IDW-Water-04	Total/NA	Water	3010A	
490-83503-D-1-B MS	Matrix Spike	Total/NA	Water	3010A	
490-83503-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
LCS 490-268017/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 490-268017/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 490-268017/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 268021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83482-A-1-D MS	Matrix Spike	TCLP	Solid	7470A	267792
490-83482-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	267792
490-83499-1	AL-IDW-Soil-01	TCLP	Soil	7470A	267799
490-83499-2	AL-IDW-Soil-02	TCLP	Soil	7470A	267799
490-83499-3	AL-IDW-Soil-03	TCLP	Soil	7470A	267799
490-83499-4	AL-IDW-Soil-04	TCLP	Soil	7470A	267799
490-83499-5	AL-IDW-Soil-05	TCLP	Soil	7470A	267792
LCS 490-268021/2-A	Lab Control Sample	Total/NA	Solid	7470A	
MB 490-267792/1-C	Method Blank	TCLP	Solid	7470A	267792
MB 490-267799/1-C	Method Blank	TCLP	Solid	7470A	267799
MB 490-268021/1-A	Method Blank	Total/NA	Solid	7470A	

Prep Batch: 268025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-268025/1-A	Method Blank	Total/NA	Solid	7470A	

Prep Batch: 268026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-7	AL-IDW-Water-02	Total/NA	Water	7470A	
490-83499-8	AL-IDW-Water-03	Total/NA	Water	7470A	
490-83499-10	AL-IDW-Water-05	Total/NA	Water	7470A	
490-83502-E-1-F MS	Matrix Spike	Total/NA	Water	7470A	
490-83502-E-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 490-268026/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-268026/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-268026/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 268069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83369-D-1-D MS	Matrix Spike	Total/NA	Water	7470A	267803
490-83369-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	267803
490-83499-6	AL-IDW-Water-01	Total/NA	Water	7470A	267803
LCS 490-267803/2-A	Lab Control Sample	Total/NA	Water	7470A	267803
LCSD 490-267803/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	267803

Metals (Continued)

Analysis Batch: 268069 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-267803/1-A	Method Blank	Total/NA	Water	7470A	267803

Analysis Batch: 268272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83446-A-5-D MS	Matrix Spike	Total/NA	Water	6010C	267816
490-83446-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	267816
490-83495-A-1-E MS	Matrix Spike	TCLP	Solid	6010C	267975
490-83495-A-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	6010C	267975
490-83499-1	AL-IDW-Soil-01	TCLP	Soil	6010C	267975
490-83499-2	AL-IDW-Soil-02	TCLP	Soil	6010C	267975
490-83499-3	AL-IDW-Soil-03	TCLP	Soil	6010C	267975
490-83499-4	AL-IDW-Soil-04	TCLP	Soil	6010C	267975
490-83499-5	AL-IDW-Soil-05	TCLP	Soil	6010C	267975
490-83499-6	AL-IDW-Water-01	Total/NA	Water	6010C	267816
490-83499-7	AL-IDW-Water-02	Total/NA	Water	6010C	267816
490-83499-8	AL-IDW-Water-03	Total/NA	Water	6010C	267816
490-83499-10	AL-IDW-Water-05	Total/NA	Water	6010C	267816
LCS 490-267816/2-A	Lab Control Sample	Total/NA	Water	6010C	267816
LCS 490-267975/2-A	Lab Control Sample	Total/NA	Solid	6010C	267975
LCSD 490-267816/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	267816
MB 490-267792/1-B	Method Blank	TCLP	Solid	6010C	267975
MB 490-267799/1-B	Method Blank	TCLP	Solid	6010C	267975
MB 490-267800/1-B	Method Blank	TCLP	Solid	6010C	267975
MB 490-267816/1-A	Method Blank	Total/NA	Water	6010C	267816
MB 490-267975/1-A	Method Blank	Total/NA	Solid	6010C	267975

Analysis Batch: 268351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83482-A-1-D MS	Matrix Spike	TCLP	Solid	7470A	268021
490-83482-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	268021
490-83499-1	AL-IDW-Soil-01	TCLP	Soil	7470A	268021
490-83499-2	AL-IDW-Soil-02	TCLP	Soil	7470A	268021
490-83499-3	AL-IDW-Soil-03	TCLP	Soil	7470A	268021
490-83499-4	AL-IDW-Soil-04	TCLP	Soil	7470A	268021
490-83499-5	AL-IDW-Soil-05	TCLP	Soil	7470A	268021
490-83499-7	AL-IDW-Water-02	Total/NA	Water	7470A	268026
490-83499-8	AL-IDW-Water-03	Total/NA	Water	7470A	268026
490-83499-10	AL-IDW-Water-05	Total/NA	Water	7470A	268026
490-83502-E-1-F MS	Matrix Spike	Total/NA	Water	7470A	268026
490-83502-E-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	268026
LCS 490-268021/2-A	Lab Control Sample	Total/NA	Solid	7470A	268021
LCS 490-268026/2-A	Lab Control Sample	Total/NA	Water	7470A	268026
LCSD 490-268026/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	268026
MB 490-267792/1-C	Method Blank	TCLP	Solid	7470A	268021
MB 490-267799/1-C	Method Blank	TCLP	Solid	7470A	268021
MB 490-268021/1-A	Method Blank	Total/NA	Solid	7470A	268021
MB 490-268025/1-A	Method Blank	Total/NA	Solid	7470A	268025
MB 490-268026/1-A	Method Blank	Total/NA	Water	7470A	268026

Metals (Continued)

Prep Batch: 268414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-9	AL-IDW-Water-04	Total/NA	Water	7470A	
490-83550-B-2-C MS	Matrix Spike	Total/NA	Water	7470A	
490-83550-B-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 490-268414/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-268414/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-268414/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 268515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-9	AL-IDW-Water-04	Total/NA	Water	7470A	268414
490-83550-B-2-C MS	Matrix Spike	Total/NA	Water	7470A	268414
490-83550-B-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	268414
LCS 490-268414/2-A	Lab Control Sample	Total/NA	Water	7470A	268414
LCSD 490-268414/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	268414
MB 490-268414/1-A	Method Blank	Total/NA	Water	7470A	268414

Analysis Batch: 268544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-8	AL-IDW-Water-03	Total/NA	Water	6010C	267816

Analysis Batch: 268758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-9	AL-IDW-Water-04	Total/NA	Water	6010C	268017
490-83503-D-1-B MS	Matrix Spike	Total/NA	Water	6010C	268017
490-83503-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	268017
LCS 490-268017/2-A	Lab Control Sample	Total/NA	Water	6010C	268017
LCSD 490-268017/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	268017
MB 490-268017/1-A	Method Blank	Total/NA	Water	6010C	268017

Analysis Batch: 268942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-6	AL-IDW-Water-01	Total/NA	Water	6010C	267816
490-83499-7	AL-IDW-Water-02	Total/NA	Water	6010C	267816
490-83499-10	AL-IDW-Water-05	Total/NA	Water	6010C	267816
LCS 490-267816/2-A	Lab Control Sample	Total/NA	Water	6010C	267816
LCSD 490-267816/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	267816
MB 490-267816/1-A	Method Blank	Total/NA	Water	6010C	267816

Analysis Batch: 270748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-9	AL-IDW-Water-04	Total/NA	Water	6010C	268017

General Chemistry

Analysis Batch: 268018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-1	AL-IDW-Soil-01	Total/NA	Soil	Moisture	
490-83499-1 DU	AL-IDW-Soil-01	Total/NA	Soil	Moisture	
490-83499-1 MS	AL-IDW-Soil-01	Total/NA	Soil	Moisture	
490-83499-1 MSD	AL-IDW-Soil-01	Total/NA	Soil	Moisture	

General Chemistry (Continued)

Analysis Batch: 268018 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-2	AL-IDW-Soil-02	Total/NA	Soil	Moisture	
490-83499-2 MS	AL-IDW-Soil-02	Total/NA	Soil	Moisture	
490-83499-2 MSD	AL-IDW-Soil-02	Total/NA	Soil	Moisture	
490-83499-3	AL-IDW-Soil-03	Total/NA	Soil	Moisture	
490-83499-3 MS	AL-IDW-Soil-03	Total/NA	Soil	Moisture	
490-83499-3 MSD	AL-IDW-Soil-03	Total/NA	Soil	Moisture	
490-83499-4	AL-IDW-Soil-04	Total/NA	Soil	Moisture	
490-83499-4 MS	AL-IDW-Soil-04	Total/NA	Soil	Moisture	
490-83499-4 MSD	AL-IDW-Soil-04	Total/NA	Soil	Moisture	
490-83499-5	AL-IDW-Soil-05	Total/NA	Soil	Moisture	
490-83499-5 MS	AL-IDW-Soil-05	Total/NA	Soil	Moisture	
490-83499-5 MSD	AL-IDW-Soil-05	Total/NA	Soil	Moisture	

Leach Batch: 268123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83344-C-1-C DU	Duplicate	Soluble	Solid	DI Leach	
490-83499-5	AL-IDW-Soil-05	Soluble	Soil	DI Leach	

Analysis Batch: 268127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83344-C-1-C DU	Duplicate	Soluble	Solid	9045D	268123
490-83499-5	AL-IDW-Soil-05	Soluble	Soil	9045D	268123
LCS 490-268127/6	Lab Control Sample	Total/NA	Solid	9045D	

Analysis Batch: 268866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-83499-6	AL-IDW-Water-01	Total/NA	Water	9040C	
490-83499-6 DU	AL-IDW-Water-01	Total/NA	Water	9040C	
490-83499-7	AL-IDW-Water-02	Total/NA	Water	9040C	
490-83499-8	AL-IDW-Water-03	Total/NA	Water	9040C	
490-83499-9	AL-IDW-Water-04	Total/NA	Water	9040C	
490-83499-10	AL-IDW-Water-05	Total/NA	Water	9040C	
LCS 490-268866/1	Lab Control Sample	Total/NA	Water	9040C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-01 — Lab Sample ID: 490-83499-1

Date Collected: 07/22/15 15:05 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	3010A			267975	07/25/15 11:24	KMS	TAL NSH
TCLP	Analysis	6010C		1	268272	07/26/15 23:16	NJB	TAL NSH
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	7470A			268021	07/25/15 12:51	RDF	TAL NSH
TCLP	Analysis	7470A		1	268351	07/25/15 17:41	BLG	TAL NSH
Total/NA	Analysis	Moisture		1	268018	07/25/15 12:38	MAA	TAL NSH

Client Sample ID: AL-IDW-Soil-02 — Lab Sample ID: 490-83499-2

Date Collected: 07/22/15 15:10 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	3010A			267975	07/25/15 11:24	KMS	TAL NSH
TCLP	Analysis	6010C		1	268272	07/26/15 23:21	NJB	TAL NSH
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	7470A			268021	07/25/15 12:51	RDF	TAL NSH
TCLP	Analysis	7470A		1	268351	07/25/15 17:44	BLG	TAL NSH
Total/NA	Analysis	Moisture		1	268018	07/25/15 12:38	MAA	TAL NSH

Client Sample ID: AL-IDW-Soil-03 — Lab Sample ID: 490-83499-3

Date Collected: 07/22/15 15:15 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	3010A			267975	07/25/15 11:24	KMS	TAL NSH
TCLP	Analysis	6010C		1	268272	07/26/15 23:25	NJB	TAL NSH
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	7470A			268021	07/25/15 12:51	RDF	TAL NSH
TCLP	Analysis	7470A		1	268351	07/25/15 17:46	BLG	TAL NSH
Total/NA	Analysis	Moisture		1	268018	07/25/15 12:38	MAA	TAL NSH

Client Sample ID: AL-IDW-Soil-04 — Lab Sample ID: 490-83499-4

Date Collected: 07/22/15 15:20 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH
TCLP	Prep	3010A			267975	07/25/15 11:24	KMS	TAL NSH
TCLP	Analysis	6010C		1	268272	07/26/15 23:29	NJB	TAL NSH
TCLP	Leach	1311			267799	07/24/15 14:39	SJM	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Soil-04 — Lab Sample ID: 490-83499-4

Date Collected: 07/22/15 15:20 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Prep	7470A			268021	07/25/15 12:51	RDF	TAL NSH
TCLP	Analysis	7470A		1	268351	07/25/15 17:49	BLG	TAL NSH
Total/NA	Analysis	Moisture		1	268018	07/25/15 12:38	MAA	TAL NSH

Client Sample ID: AL-IDW-Soil-05 — Lab Sample ID: 490-83499-5

Date Collected: 07/23/15 10:45 — **Matrix: Soil**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			267792	07/24/15 14:45	SJM	TAL NSH
TCLP	Prep	3010A			267975	07/25/15 11:24	KMS	TAL NSH
TCLP	Analysis	6010C		1	268272	07/27/15 00:18	NJB	TAL NSH
TCLP	Leach	1311			267792	07/24/15 14:45	SJM	TAL NSH
TCLP	Prep	7470A			268021	07/25/15 12:51	RDF	TAL NSH
TCLP	Analysis	7470A		1	268351	07/25/15 17:29	BLG	TAL NSH
Soluble	Leach	DI Leach			268123	07/25/15 15:50	SJM	TAL NSH
Soluble	Analysis	9045D		1	268127	07/25/15 16:00	SJM	TAL NSH
Total/NA	Analysis	Moisture		1	268018	07/25/15 12:38	MAA	TAL NSH

Client Sample ID: AL-IDW-Water-01 — Lab Sample ID: 490-83499-6

Date Collected: 07/23/15 08:00 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268272	07/27/15 02:10	NJB	TAL NSH
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268942	07/28/15 23:39	TSC	TAL NSH
Total/NA	Prep	7470A			267803	07/24/15 15:14	RDF	TAL NSH
Total/NA	Analysis	7470A		1	268069	07/24/15 20:24	RDF	TAL NSH
Total/NA	Analysis	9040C		1	268866	07/28/15 17:28	SJM	TAL NSH

Client Sample ID: AL-IDW-Water-02 — Lab Sample ID: 490-83499-7

Date Collected: 07/23/15 08:10 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268272	07/27/15 02:06	NJB	TAL NSH
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268942	07/28/15 23:16	TSC	TAL NSH
Total/NA	Prep	7470A			268026	07/25/15 13:05	RDF	TAL NSH
Total/NA	Analysis	7470A		1	268351	07/25/15 18:35	BLG	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Client Sample ID: AL-IDW-Water-02 — Lab Sample ID: 490-83499-7

Date Collected: 07/23/15 08:10 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9040C		1	268866	07/28/15 17:28	SJM	TAL NSH

Client Sample ID: AL-IDW-Water-03 — Lab Sample ID: 490-83499-8

Date Collected: 07/23/15 08:20 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268272	07/27/15 02:18	NJB	TAL NSH
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268544	07/28/15 01:39	TSC	TAL NSH
Total/NA	Prep	7470A			268026	07/25/15 13:05	RDF	TAL NSH
Total/NA	Analysis	7470A		1	268351	07/25/15 18:37	BLG	TAL NSH
Total/NA	Analysis	9040C		1	268866	07/28/15 17:28	SJM	TAL NSH

Client Sample ID: AL-IDW-Water-04 — Lab Sample ID: 490-83499-9

Date Collected: 07/23/15 11:00 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			268017	07/25/15 12:35	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268758	07/28/15 13:16	NJB	TAL NSH
Total/NA	Prep	3010A			268017	07/25/15 12:35	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	270748	08/05/15 01:05	LEG	TAL NSH
Total/NA	Prep	7470A			268414	07/27/15 14:04	BLG	TAL NSH
Total/NA	Analysis	7470A		1	268515	07/27/15 19:31	RDF	TAL NSH
Total/NA	Analysis	9040C		1	268866	07/28/15 17:28	SJM	TAL NSH

Client Sample ID: AL-IDW-Water-05 — Lab Sample ID: 490-83499-10

Date Collected: 07/23/15 11:05 — **Matrix: Water**
Date Received: 07/24/15 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268272	07/27/15 02:14	NJB	TAL NSH
Total/NA	Prep	3010A			267816	07/24/15 15:05	ZLN	TAL NSH
Total/NA	Analysis	6010C		1	268942	07/28/15 23:44	TSC	TAL NSH
Total/NA	Prep	7470A			268026	07/25/15 13:05	RDF	TAL NSH
Total/NA	Analysis	7470A		1	268351	07/25/15 18:39	BLG	TAL NSH
Total/NA	Analysis	9040C		1	268866	07/28/15 17:28	SJM	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL NSH
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
9045D	pH	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-83499-1

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-16
Arizona	State Program	9	AZ0473	05-05-16
Arkansas DEQ	State Program	6	88-0737	04-25-16
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200010	12-09-15
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	10-31-15
Kentucky (UST)	State Program	4	19	06-30-16
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-16
Maryland	State Program	3	316	03-31-16
Massachusetts	State Program	1	M-TN032	06-30-16
Minnesota	NELAP	5	047-999-345	12-31-15
Mississippi	State Program	4	N/A	06-30-16
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-16
New Hampshire	NELAP	1	2963	10-09-15
New Jersey	NELAP	2	TN965	09-30-15
New York	NELAP	2	11342	03-31-16
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-15 *
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-15 *
Oregon	NELAP	10	TN200001	04-27-16
Pennsylvania	NELAP	3	68-00585	06-30-16
Rhode Island	State Program	1	LAO00268	12-30-15
South Carolina	State Program	4	84009 (001)	02-28-16
South Carolina (DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-15 *
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-15 *
Virginia	NELAP	3	460152	06-14-16
Washington	State Program	10	C789	07-19-15 *
West Virginia DEP	State Program	3	219	02-28-16
Wisconsin	State Program	5	998020430	08-31-15 *
Wyoming (UST)	A2LA	8	453.07	12-31-15

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-83499 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 7/24/2015 @ 0840

1. Tracking # 1447 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 94660220

2. Temperature of rep. sample or temp blank when opened: 1.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) MDM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) MDM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) MDM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) MDM

I certify that I attached a label with the unique LIMS number to each container (intial) MDM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204
phone 615.726.0177 fax

Chain of Custody Record

Loc: 490
83499

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

8/6/2015

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mike Purvis	Site Contact: Dan Peterman	ExxonMobil PM: Bruce Frink	COC No:
ARCADIS Raleigh - Exxon (10141)	Tel/Fax: 919.415.2252	Lab Contact: Heather Wagner	TA Account #: 49001238	/ of / COCs
801 Corporate Center Drive, Suite 300	Analysis Turnaround Time			Sampler:
Raleigh, NC 27607	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
(919) 854-1282	TAT if different from Below 10			Walk-in Client:
(919) 854-5448	☐ 2 weeks			Lab Sampling:
Project Name: VCC Almont	☐ 1 week			
Site: 2400 US Hwy 421 N, Wilmington, NC	☑ 2 days			Job / SDG No.:
P O # B0085757.1501	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TAL Metals	pH	TCLP Metals	Sample Specific Notes:
AL-IDW-Soil-01	7-22-15	1505	C	S	1	N	N			X	-1
AL-IDW-Soil-02	7-22-15	1510	C	S	1	N	N			X	2
AL-IDW-Soil-03	7-22-15	1515	C	S	1	N	N			X	3
AL-IDW-Soil-04	7-22-15	1520	C	S	1	N	N			X	4
AL-IDW-Soil-05	7-23-15	1045	C	S	1	N	N		X	X	5
AL-IDW-Water-01	7-23-15	0800	C	W	2	N	N	X	X		6
AL-IDW-Water-02	7-23-15	0810	C	W	2	N	N	X	X		7
AL-IDW-Water-03	7-23-15	0820	C	W	2	N	N	X	X		8
AL-IDW-Water-04	7-23-15	1100	C	W	2	N	N	X	X		9
AL-IDW-Water-05	7-23-15	1105	C	W	2	N	N	X	X		10

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

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: Please provide a 48-hr TAT on these samples.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ARCADIS	7-23-15 1600	[signature]	TAN	7-24-15 @ 0840 1.8c
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 490-83499-1

Login Number: 83499
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	1.8
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 containers received and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Imagine the result

ExxonMobil VCC Almont

Data Review

WILMINGTON, NORTH CAROLINA

Total and Dissolved Metals and Miscellaneous Analyses

SDGs #490-84512-1

Analyses Performed By:
Test America Analytical Testing Corporation
Nashville, Tennessee

And

ALS Environmental
Kelso, Washington

Report: #24061R
Review Level: Tier III
Project: B0085757.1501.00008

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #490-84512-1 for sampling from the ExxonMobil VCC-Almont in Wilmington, North Carolina. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis	
						MET	MISC
490-84512-1	AL-MW-04D	490-84512-1	Water	8/4/2015		X	
	AL-MW-03D	490-84512-2	Water	8/4/2015		X	
	AL-MW-02D	490-84512-3	Water	8/4/2015		X	
	AL-MW-11D	490-84512-4	Water	8/4/2015		X	
	AL-MW-11	490-84512-5	Water	8/4/2015		X	
	AL-MW-06	490-84512-6	Water	8/4/2015		X	
	AL-MW-07	490-84512-7	Water	8/4/2015		X	
	AL-MW-05	490-84512-8	Water	8/4/2015		X	
	AL-QAQC-DUP-01	490-84512-9	Water	8/4/2015	AL-MW-11	X	
	AL-MW-04	490-84512-10	Water	8/4/2015		X	
	AL-MW-03	490-84512-11	Water	8/4/2015		X	
	AL-MW-02	490-84512-12	Water	8/4/2015		X	
	AL-MW-09	490-84512-13	Water	8/4/2015		X	
	AL-MW-10	490-84512-14	Water	8/4/2015		X	
	AL-MW-08	490-84512-15	Water	8/4/2015		X	
	AL-MW-01	490-84512-16	Water	8/4/2015		X	
	AL-QAQC-EB-01	490-84512-17	Water	8/4/2015		X	
	AL-MW-12	490-84512-18	Water	8/5/2015		X	

Note:
1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location AL-MW-11D (SW-846 6010 and 7062).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010 and 7062. Data were reviewed in accordance with USEPA National Functional Guidelines for Data Review for October 2004 was used for guidance.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning (SW-846 6020 analysis only)

The %RSD of the absolute signals for all analytes in the tuning solution must be less than 5% for each analyte and the instrument mass resolution must be within 0.1 amu over manufacturer‘s specifications the range of 6-210 amu.

Mass spectrometer performance and system performance was acceptable.

4. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument’s continuing performance is satisfactory.

4.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All initial and continuing calibration verification standard recoveries were within the control limit.

4.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table (if applicable).

All CRDL standard recoveries were within control limits.

4.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

5. Internal Standard Performance (SW-846 6020 analysis only)

Internal standard performance criteria insure that the ICP/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard analytes associated with the metals must exhibit a percent recovery within the established acceptance limits of 60% to 125%

All internal standard responses were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

6.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

6.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the detection limit. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the detection limit, a

The MS/MSD analysis was performed in replacement of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPD.

7. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/ Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
AL-MW-11/ AL-QAQC-DUP-01	Lead (total)	0.0039 J	0.0038 J	AC
	Lead (dissolved)	0.0033 J	0.005 U	AC

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCSD analysis exhibited recoveries within the control limits.

9. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution exhibited %D within the control limit.

10. General Assessment – Total vs. Dissolved

The calculated %D between the total and the dissolved sample results were within the control limit.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
ICP Serial Dilution %D		X		X	
Total vs. Dissolved		X		X	
Reporting Limit Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-MS Internal Standards		X		X	
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 7062	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, no other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard

analysis are presented below in the CRDL standards evaluation table.

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instances where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier flag will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The MS/MSD was performed in replace of the laboratory duplicate analysis. The RPD between the MS and MSD recoveries were within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/ Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
AL-MW-11/ AL-QAQC-DUP-01	Arsenic (total)	0.004	0.0038	AC
	Arsenic (dissolved)	0.0037	0.0043	

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120% is applied for water matrices and laboratory-established acceptance limits for soil matrices.

The LCS analysis exhibited recoveries within the control limits.

7. Method of Standard Additions (MSA)

No samples were analyzed following the method of standard additions.

8. General Assessment – Total vs. Dissolved

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 7062	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Graphite Furnace – Atomic Absorption					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X		X	
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Reporting Limit Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard Recovery		X		X	
Furnace check					X
MSA		X		X	
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

VALIDATION PERFORMED BY: Todd Church

SIGNATURE: _____

DATE: August 30, 2015

PEER REVIEW: Dennis Capria

DATE: September 8, 2015

DATA QUALIFIER SUMMARY

REPORT NUMBER 24061T
ANALYTICAL DATA VALIDATION SUMMARY

Sample Delivery Group No.	Sample ID	Compound	Qualifier	Reason
Inorganic Analysis				
490-84512-1/ 490-84512-2	AL-MW-04D	None	--	--
	AL-MW-03D	None	--	--
	AL-MW-02D	None	--	--
	AL-MW-11D	None	--	--
	AL-MW-11	None	--	--
	AL-MW-06	None	--	--
	AL-MW-07	None	--	--
	AL-MW-05	None	--	--
	AL-QAQC-DUP-01	None	--	--
	AL-MW-04	None	--	--
	AL-MW-03	None	--	--
	AL-MW-02	None	--	--
	AL-MW-09	None	--	--
	AL-MW-10	None	--	--
	AL-MW-08	None	--	--
	AL-MW-01	None	--	--
	AL-QAQC-EB-01	None	--	--
	AL-MW-12	None	--	--

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04D

Lab Sample ID: 490-84512-1

Date Collected: 08/04/15 08:20
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:18	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:58	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-03D

Lab Sample ID: 490-84512-2

Date Collected: 08/04/15 09:30
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.280		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:22	1
Lead	0.00520		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.290		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 01:13	1
Lead	0.00690		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 01:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-02D

Lab Sample ID: 490-84512-3

Date Collected: 08/04/15 10:40
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0325		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:26	1
Lead	0.00510		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0354		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 01:17	1
Lead	0.00470	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 01:17	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-11D

Lab Sample ID: 490-84512-4

Date Collected: 08/04/15 11:40
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 14:21	1
Lead	**0.00460**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 14:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:15	1
Lead	**0.00510**		0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-11

Lab Sample ID: 490-84512-5

Date Collected: 08/04/15 12:50
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 14:57	1
Lead	**0.00390**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 14:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:47	1
Lead	**0.00330**	**J**	0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-06

Lab Sample ID: 490-84512-6

Date Collected: 08/04/15 14:05
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0146**		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:01	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:51	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-07

Lab Sample ID: 490-84512-7

Date Collected: 08/04/15 14:55
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0715		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:05	1
Lead	0.00290	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0692		0.0100	0.00860	mg/L		08/07/15 12:00	08/10/15 23:55	1
Lead	0.00330	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/10/15 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-05

Lab Sample ID: 490-84512-8

Date Collected: 08/04/15 16:00
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:10	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:10	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:00	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-QAQC-DUP-01

Lab Sample ID: 490-84512-9

Date Collected: 08/04/15 01:00
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:14	1
Lead	**0.00380**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:04	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-04

Lab Sample ID: 490-84512-10

Date Collected: 08/04/15 08:05
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.73		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:29	1
Lead	0.0728		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.75		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:09	1
Lead	0.0564		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-03

Lab Sample ID: 490-84512-11

Date Collected: 08/04/15 09:42
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.348**		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:33	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.354**		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:13	1
Lead	**0.00290**	**J**	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-02

Lab Sample ID: 490-84512-12

Date Collected: 08/04/15 10:45

Matrix: Water

Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.352		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:37	1
Lead	0.00460	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:37	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.326		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:27	1
Lead	0.00470	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-09

Lab Sample ID: 490-84512-13

Date Collected: 08/04/15 12:02
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.202		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:41	1
Lead	0.0235		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.167		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:32	1
Lead	0.0228		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-10

Lab Sample ID: 490-84512-14

Date Collected: 08/04/15 13:55
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:46	1
Lead	**0.00200**	**J**	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:36	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-08

Lab Sample ID: 490-84512-15

Date Collected: 08/04/15 15:12
Matrix: Water
Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0138		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:50	1
Lead	0.00320	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0159		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:41	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-01

Lab Sample ID: 490-84512-16

Date Collected: 08/04/15 16:22

Matrix: Water

Date Received: 08/06/15 08:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0377		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:54	1
Lead	0.00250	J	0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0395		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:45	1
Lead	0.00350	J	0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-QAQC-EB-01

Lab Sample ID: 490-84512-17

Date Collected: 08/04/15 16:30
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 15:59	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 15:59	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:49	1
Lead	ND		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-1

Client Sample ID: AL-MW-12

Lab Sample ID: 490-84512-18

Date Collected: 08/05/15 08:05
Date Received: 08/06/15 08:50

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0201		0.0100	0.00860	mg/L		08/07/15 13:03	08/10/15 16:13	1
Lead	0.00530		0.00500	0.00200	mg/L		08/07/15 13:03	08/10/15 16:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0194		0.0100	0.00860	mg/L		08/07/15 12:00	08/11/15 00:54	1
Lead	0.00520		0.00500	0.00200	mg/L		08/07/15 12:00	08/11/15 00:54	1

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/17/2015

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.	Loc: 490 84512
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 1 of 2	
Company: ARCADIS U.S., Inc.				Job #:	
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard				
City: Raleigh	TAT Requested (days):				
State, Zip: NC, 27607-5073					
Phone: 919-610-5562	PO #: Purchase Order Requested				
Email: mike.purvis@arcadis-us.com	WO #:				
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238				
Site: VCC-Almont Wilmington, NC	SSOW#:				

Analysis Requested

Preservation Codes.

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	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)	6010C, SUBCONTRACT	Total As, Pb (6010)	Diss As, Pb (6010)	Total Number of containers	Special Instructions/Note:
				Preservation Code:				D	D	D		
1	AL-MW-04D	8-4-15	0820	G	Water	X			1	1		
2	AL-MW-03D	8-4-15	0930	G	Water	X			1	1		
3	AL-MW-02D	8-4-15	1040	G	Water	X			1	1		
4	AL-MW-11D	8-4-15	1140	G	Water	X			1	1		
	AL-MW-11D (MS)	8-4-15	1140	G	Water	X	X		1	1		
	AL-MW-11D (MSD)	8-4-15	1140	G	Water	X	X		1	1		
5	AL-MW-11	8-4-15	1250	G	Water	X			1	1		
6	AL-MW-06	8-4-15	1405	G	Water	X			1	1		
7	AL-MW-07	8-4-15	1455	G	Water	X			1	1		
8	AL-MW-05	8-4-15	1600	G	Water	X			1	1		
9	AL-QAQC-DUP-01	8-4-15	NIR	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15 / 1400	Arcadis	FedEx	8-5-15 / 1400	FedEx
				8-6-15 0850	TAN

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRO

Loc: 490
84512

8/17/2015

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.2
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238			
Site: VCC-Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	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)	6010C, SUBCONTRACT	Total As, Pb (6010)	Diss As, Pb (6010)	Total Number of containers	Special Instructions/Note:
				Preservation Code:		X	X	D	D	D	X	
10	AL-MW-04	8-4-15	0805	G	Water	X			1	1		
11	AL-MW-03	8-4-15	0942	G	Water	X			1	1		
12	AL-MW-02	8-4-15	1045	G	Water	X			1	1		
13	AL-MW-09	8-4-15	1202	G	Water	X			1	1		
14	AL-MW-10	8-4-15	1355	G	Water	X			1	1		
15	AL-MW-08	8-4-15	1512	G	Water	X			1	1		
16	AL-MW-01	8-4-15	1622	G	Water	X			1	1		
17	AL-QAQC-EB-01	8-4-15	1630	G	Water	X			1	1		
18	AL-MW-12	8-5-15	0805	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15/1400	Arcadis	Fed Ex	8-5-15/1400	Fed Ex
				8-6-15@0850	TAN

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: VCC Almont

TestAmerica Job ID: 490-84512-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

K1508571

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.1
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh/Almont Groundwater	Project #: 49001238			
Site: VCC Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	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)	6010C, SUBCONTRACT	Total As (7062)	Diss As (7062)	Total Number of containers	Special Instructions/Note:
			Preservation Code		X	X	D	D	D	X	
AL-MW-04D	8-4-15	0820	G	Water	X			1	1		
AL-MW-03D	8-4-15	0830	G	Water	X			1	1		
AL-MW-02D	8-4-15	1040	G	Water	X			1	1		
AL-MW-11D	8-4-15	1140	G	Water	X			1	1		
AL-MW-11D (MS)	8-4-15	1140	G	Water	X	X		1	1		
AL-MW-11D (MSD)	8-4-15	1140	G	Water	X			1	1		
AL-MW-11	8-4-15	1250	G	Water	X			1	1		
AL-MW-06	8-4-15	1405	G	Water	X			1	1		
AL-MW-07	8-4-15	1455	G	Water	X			1	1		
AL-MW-05	8-4-15	1600	G	Water	X			1	1		
AL-QAQC-DUP-01	8-4-15	NIR	G	Water	X			1	1		

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15/1400	Arcadis	FedEx	8-5-15/1400	
			Kelly Reed	8/6/15 17:30	PLS

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

K1508571

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Brian Lovgren	Lab PM: Wagner, Heather	Carrier Tracking No(s):	COC No: 490-41108-13936.2
Client Contact: Mike Purvis	Phone: 919-604-4557	E-Mail: heather.wagner@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 801 Corporate Center Drive Suite 300	Due Date Requested: Standard			
City: Raleigh	TAT Requested (days):			
State, Zip: NC, 27607-5073				
Phone: 919-610-5562	PO #: Purchase Order Requested			
Email: mike.purvis@arcadis-us.com	WO #:			
Project Name: Arcadis - XOM - Raleigh / Almont Groundwater	Project #: 49001238			
Site: VCC Almont Wilmington, NC	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	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)	6010C, SUBCONTRACT	Total As (7060)	Diss As (7060)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	0	0	X	
AL-MW-04	8-4-15	0805	G	Water	X			1	1		
AL-MW-03	8-4-15	0942	G	Water	X			1	1		
AL-MW-02	8-4-15	1045	G	Water	X			1	1		
AL-MW-09	8-4-15	1202	G	Water	X			1	1		
AL-MW-10	8-4-15	1355	G	Water	X			1	1		
AL-MW-08	8-4-15	1512	G	Water	X			1	1		
AL-MW-01	8-4-15	1622	G	Water	X			1	1		
AL-QAQC-EB-01	8-4-15	1630	G	Water	X			1	1		
AL-MW-12	8-5-15	0805	G	Water	X			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brian Lovgren	8-5-15 / 1400	Arcadis	FedEx	8-5-15 / 1400	FedEx
			Kelly Reed	8-6-15 11:30	TMS

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04D** **Lab Code:** **K1508571-001**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	1.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04D** **Lab Code:** **K1508571-001DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	1.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03D** **Lab Code:** **K1508571-002**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	25.0	5.0	50.0	08/10/15	08/17/15	381		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03D** **Lab Code:** **K1508571-002DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	25.0	5.0	50.0	08/12/15	08/17/15	363		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02D** **Lab Code:** **K1508571-003**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/10/15	08/17/15	45.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02D** **Lab Code:** **K1508571-003DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/12/15	08/17/15	43.9		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11D** **Lab Code:** **K1508571-004**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.8	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11D** **Lab Code:** **K1508571-004DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	1.0		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11** **Lab Code:** **K1508571-005**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	4.0		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-11** **Lab Code:** **K1508571-005DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	3.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-06** **Lab Code:** **K1508571-006**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	14.2		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-06** **Lab Code:** **K1508571-006DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	13.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-07** **Lab Code:** **K1508571-007**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/10/15	08/17/15	90.4		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-07** **Lab Code:** **K1508571-007DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/12/15	08/17/15	87.3		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-05** **Lab Code:** **K1508571-008**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-05** **Lab Code:** **K1508571-008DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-DUP-01** **Lab Code:** **K1508571-009**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	3.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-DUP-01** **Lab Code:** **K1508571-009DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	4.3		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04** **Lab Code:** **K1508571-010**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	500	100	1000.0	08/10/15	08/17/15	4860		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-04** **Lab Code:** **K1508571-010DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	500	100	1000.0	08/12/15	08/17/15	4720		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03** **Lab Code:** **K1508571-011**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/10/15	08/17/15	398		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-03** **Lab Code:** **K1508571-011DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/12/15	08/17/15	397		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02** **Lab Code:** **K1508571-012**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	50.0	10.0	100.0	08/10/15	08/17/15	392		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-02** **Lab Code:** **K1508571-012DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/12/15	08/17/15	358		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-09** **Lab Code:** **K1508571-013**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/10/15	08/17/15	262		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-09** **Lab Code:** **K1508571-013DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	20.0	4.0	40.0	08/12/15	08/17/15	173		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-10** **Lab Code:** **K1508571-014**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-10** **Lab Code:** **K1508571-014DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-08** **Lab Code:** **K1508571-015**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	2.0	0.4	4.0	08/10/15	08/17/15	22.1		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-08** **Lab Code:** **K1508571-015DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	16.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-01** **Lab Code:** **K1508571-016**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/10/15	08/17/15	50.5		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-01** **Lab Code:** **K1508571-016DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	10.0	2.0	20.0	08/12/15	08/17/15	44.8		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-EB-01** **Lab Code:** **K1508571-017**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/10/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/04/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-QAQC-EB-01** **Lab Code:** **K1508571-017DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	1.0	0.2	2.0	08/12/15	08/17/15	0.2	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/05/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-12** **Lab Code:** **K1508571-018**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/10/15	08/17/15	24.7		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1508571
Project No.:	49001238	**Date Collected:**	08/05/15
Project Name:	XOM Raleigh/Almont Groundwater	**Date Received:**	08/06/15
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **AL-MW-12** **Lab Code:** **K1508571-018DISS**

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7062	5.0	1.0	10.0	08/12/15	08/17/15	22.4		

Comments:

Appendix D

Waste Manifest Documentation

HAZ~MAT

ENVIRONMENTAL SERVICES
P.O. BOX 37392 • CHARLOTTE, N.C. 28237
(704) 332-5600
FAX (704) 375-7183

Manifest No. 71366

P.O. No.

Job No.

NON-HAZARDOUS SPECIAL WASTE

Section I. GENERATOR (Generator complete all of Section I)

GENERATOR LOCATION

NAME: Exxon Mobil Oil Corporation
ORIGINATING ADDRESS: 2400 US Hwy 421N
MAILING ADDRESS:
CITY: Wilmington STATE: NC ZIP: 28401
PHONE NO.: 813-991-7413
CONTACT NAME: Bruce Frink
DES. OF WASTE: Non-Dot Regulated Material

WORK CONTRACTED BY
Bill To (if different from information at left)

NAME: Arcadis
ADDRESS: 801 Corporate Center Dr. Ste. 300
CITY: Raleigh STATE: NC ZIP: 27607
PHONE NO.: 919-415-2295
CONTACT NAME: Dan Peterman

No.	Type	Units	Quantity
48	DM	P	20000

Section II. INVOICE INFORMATION

DESCRIPTION		GALLONS	DRUMS	LINE TOTAL	
1. PETROLEUM CONTACT WATER					
2. OFF-SPEC LIGHT OIL, DIESEL OR GAS					
3. NON-HAZARDOUS LIQUIDS					
4. SEDIMENT OR SOLIDS					
5. 55-GALLON DRUM REMOVED - SOLID OR EMPTY	Soil Cuttings		20		
6. 55-GALLON DRUM REMOVED - LIQUID	Purge Water		23		
7.	Drilling Mud		5		
8.					
9.					
10. ARRIVAL TIME: DEPARTURE TIME:					

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations. Generator/Customer shall reimburse HAZ-MAT its reasonable expenses and charges for handling, analyzing, loading, preparing, transporting, storing or caring for nonconforming or off spec waste, including costs of decontamination and cleaning of equipment. Generator must notify HAZ-MAT of any changes to the waste stream prior to shipment.

Daniel Peterman on behalf of Exxon Mobil — Generator Authorized Agent Name

Signature

08/27/15 — Shipment Date

Section III. TRANSPORTER (Generator complete all Transporter I complete eg. Transporter II complete feel)

HAZ~MAT
ENVIRONMENTAL SERVICES
P.O. BOX 37392 • CHARLOTTE, N.C. 28237

a. Driver Name/Title: Tommy Franklin
b. Phone No.: 704-332-5600 c. Truck No.: RT1/BT19

Hazardous Waste Transporter Permits
EPA NCR 000003186
EPA NCD048463370

d. Tommy Franklin — Driver Signature
08/27/15 — Shipment Date

TRANSPORTER II

e. Name:
f. Address:
g. Driver Name/Title:
h. Phone No.: i. Truck No.:
j. Transporter II Permit Nos.

Driver Signature

Shipment Date

Section IV. FACILITY INFORMATION AND CERTIFICATE OF DISPOSAL

Site Name: Haz-Mat Environmental Services
Physical Address: 210 Dalton Avenue, Charlotte, N.C. 28206
a. Phone No.: 704-332-5600
b. Mailing Address: P.O. Box 37392, Charlotte, N.C. 28237

e. Discrepancy Indication Space

This is to certify that all non-hazardous material removed from above location has been received and will be disposed of in accordance with applicable local, state and federal regulations in the following manner: (1) Petroleum products are blended into a beneficial reusable fuel for use in large industrial burners. (2) Waste waters are to be treated with polymers, pH adjusters, and a flocculant, then flows through a dissolved air flotation system for pretreatment separation, then into the CMUD sanitation sewer system under permit IUP#5012. (3) Sludges from treatment systems are hauled to E.P.A. approved facilities for proper disposal. Manifest and certificate of disposal are on file. (4) Our treatment system operates on a first in, first out basis and product should be processed within seven days.

SIGNATURE OF FACILITY AGENT	DATE	MONTH	DAY	YEAR
Mike Hinkle		8	27	15

ORIGINAL - FINAL T.S.D. • YELLOW - DISPOSER • PINK - 1ST T.S.D. • GOLD - GENERATOR